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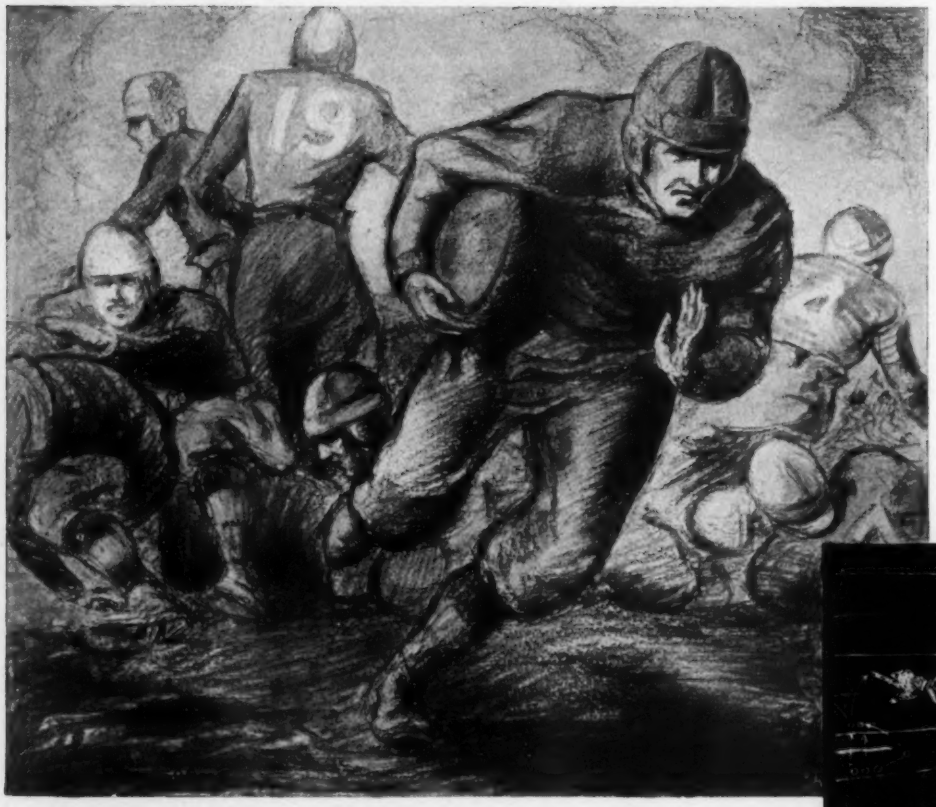

Skull Practice

BACK of the spectacular play—back of the breath-taking plunge to victory—is a rigid, systematic, week-in, week-out gruelling that the average football enthusiast gives small consideration.

Like the coach planning his plays in advance—dinning them into the mind of each individual member of the team — spending himself that his team may achieve glory—just so Foote & Jenks flavor experts toil patiently in their laboratory so that your product may enjoy the preference of the multitudes.

Perfect flavors are not produced over night. It took more than 40 years of research and experiment to perfect the process which has given the trade Foote & Jenks ISOLATE super-flavors. The fact that we have succeeded in producing America's finest commercial flavors is amply attested by the ever-increasing number of confectioners who avail themselves of ISOLATE'S advantages.

THIS Company approaches a half century of specialization in the task of developing and perfecting terpeneless, super concentrated, water soluble flavors. Our entire time and attention are devoted to the manufacture of SOLUBLE Concentrates—to research work, scientific control, and the constant testing of our products in various forms of foods. It will be to your definite advantage to avail yourself of this specialized service.

FOOTE & JENKS, JACKSON, MICHIGAN

FOOTE & JENKS' "ISOLATES"

VANILLA · · · LEMON · · · ORANGE *and 12 others*

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Purity **Uniformity**

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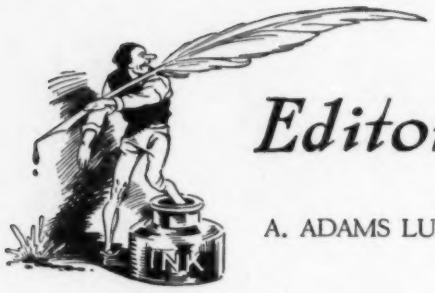


Editorial

A. ADAMS LUND, Editor

After Bigger Game

THE tobacco company has discontinued its direct attack upon the candy industry. . . .

Only the one subtle word "reach" remains to remind vacillating purchasers of the ghosts that lurk in "fattening sweets." As a matter of fact, open proclamation is no longer necessary. The one word "reach" suggests all that went before. Do we need a couple of encyclopaedias to tell us that "Uneeda" is a biscuit?

It is the test of a well-directed advertising campaign to be able to drop out of the public prints for a short spell and have the message carry along on its own momentum. "Reach" will suggest for many months to come all that was worst in one of the most morally vicious and economically profitable campaigns which this country has ever witnessed.

To the pollyanas in our industry, the worst is over. All is quiet along the eastern front. The mighty lion has lain down with the lamb.

Merrily, merrily, the tobacco company swings into its new campaign: "An Ancient Prejudice has been Removed." The enemy has capitulated. Sales of candy are up 3½ per cent. The defense prepares to lay down its arms. All is to be happy ever after. Safe in the arms of Morpheus. . . .

Students of the new advertising psychology will perceive in the tobacco company's latest tactics a menace far surpassing the local skirmish which has just ended.

Economically, the situation has not changed. There is the same relentless competition for the luxury portion of the consumer's dollar. What goes for candy and other harmless forms of entertainment will not be spent for cigarettes. Now look back just a moment to a point five years ago. . . .

Fierce competition in the cigarette industry convinced its leaders that a high level of profits could not be maintained without in some revolutionary manner enlarging the market for cigarettes. About all the men who were going to smoke, smoked. Obviously, there was not enough business to go around. If only women might be induced to take to the weed. . . .

The wish was father to the advertising. It was a brilliant example of the new psychology. The wistful "Blow some my way" of the Chesterfield girl *portrayed women in a favorable attitude* with respect to smoking. That seems to have been the opening gun. Its reception by the public was clicked and studied by other manufacturers.

Day after day the women of the nation were confronted with this new association of ideas. "Blow some my way." Until she became used to it. The idea was no longer repellant. It was smart. . . .

Women were next portrayed in the act of cooperating. She held the lighted match for the man. But *still she did not smoke.* Follow the psychology.

Even as recently as a year ago, with the infamous "Reach" campaign at its height, not one of the tobacco people had yet dared to portray a woman in the act of smoking. The famous "Lucky Girl" was *not shown smoking.* But it came not long after that.

There was the new psychology reduced to its elements. How it worked out is a matter of history. Now examine the present situation in the light of these facts. . . .

Continued aggressive competition. The second major market well on the way to being "sold up." Where do we go from here?

Children—boys and girls of 15 and under smoking cigarettes like old timers—newspaper articles showing children of 4 who have become cigar smokers—Windsor McCay cartoons for the American Tobacco Company bringing children into the picture for what is probably the first time in the history of tobacco advertising!

And the inference? The child market is the last stand of the candy industry. The tobacco industry has not surrendered. They are laying the groundwork for future campaigns. Women? That's past history. Watch out! They are after bigger game.

Photos of the Past

PICTURES of the earlier days of our industry are often startling reminders of progress made and of problems yet to be overcome. As we view them our thoughts span the years in both directions—past and future. We are reminded of what has passed; we paint our own picture of what is to come. In crossing these mental bridges, we get closer to the solution of our immediate problems.

THE MANUFACTURING CONFECTIONER has in its historical file a place for all photographs of early origin which pertain in any way to the confectionery industry. Such photographs have long since passed beyond the stage where they are of personal interest only to you and have become of genuine interest to everybody in the industry. We do not doubt but that you have in your files some of the material we are looking for.

We are wondering if it would be asking too much of you to dig down among your old records and uncover some of these glimpses of the past and to loan them to us for reproduction. You surely must have some. Look now and see.

If possible, indicate on the back of each picture any pertinent information that you may have at hand, such as where taken, the approximate date, names of individuals (if any appear in the photographs), etc.

Address them to the attention of the Editor, at our New York office, 39 Cortland street.

We know that all of you who can, will cooperate with us in the interest of the industry and we thank you in anticipation of our help.

Cigars for Women

AN up and coming Hollywood tobacconist, so the New York Sun informs us, has put on the market a cigar especially intended for women.

"Why not?" echoes the eminent sensationalist Rupert Hughes, who assures us that George Washington's mother smoked a pipe with great gusto.

One might remind Mr. Hughes of a number of other disgusting habits of by-gone generations which saner thought had come to regard as long since lived down.

Women are quick to take up anything which makes them the center of attraction or which promises a momentary thrill. Mostly their fads are short-lived. They take to them as a child takes to a new toy but soon grow weary of them and go on to something else. For the most part, these playthings have been harmless enough, and have come and gone leaving no permanent imprint upon their lives.

But now tobacco. When the novelty of doing something "different" has worn off, will women be able to drop it as they have all their other baubles? Ask the man who smokes. He knows.

We dislike to think of ourselves as becoming old-fashioned—especially while we are in our scant thirties—nor are we conscious of any pet obsessions that we know of. But it is hard, very hard, to reconcile

"The lips you love to touch"

with

"The woman who smokes *cigars.*"

COLOR TRADITIONS IN HARD CANDY

By Norman W. Kempf

THE other evening at the monthly session of our Bridge Club the hostess adorned the tables with beautifully colored hard candies and spiced strings of a make unknown to my inquisitive eye. Being curious about the flavors used by the unknown manufacturer, I selected a pink piece, which suggested to me that it must be either strawberry, wintergreen or rose. But I had reckoned without my candy-maker—it was *sassafras!* So I asked myself—why should sassafras be colored *pink?* The leaves of the tree are green, the flowers are white with yellow centers, the roots brown. Nowhere in the anatomy of a sassafras tree is there any pink, and yet here sure enough was a pink Sassafras Candy.

Later in the evening I essayed a lavender-colored spiced string—and as luck would have it, I had again stumbled upon my unfavorite sassafras flavor. Here was a problem for a philosopher—if pink is sassafras in hard candy, what is lavender sassafras doing in spiced strings?

Custom and habit have developed certain color traditions among candy makers and their beloved "publics." As a result of these customs the public has come to associate the different colors with definite flavors, particularly in hard candy. Some of these flavor associations have a perfectly logical reason for being, because the color employed quite definitely represents the color of the fruit whose flavor dominates the candy. For example, an orange-flavored candy is usually colored with orange color, and thus it requires no stretch of imagination to know when one is about to tackle a piece of orange hard candy. Similarly, yellow undoubtedly means lemon (although sometimes we get fooled and get butterscotch), green is lime, red is raspberry, cherry and so on. However, there are some frequently practiced associations of color and flavor which have always been mysteries to me. I have seen many varieties of licorice root, grown in all parts of the world—not one of them was black! I remember buying black "licorice" shoe strings as a child and vaguely picturing some sort of black fruit from which this delightful confection originated. In fact, I doubted the authenticity of the first licorice root I ever saw because it wasn't black! Nor have I ever seen a red and white mint leaf. Yet when I see a piece of white hard candy beautifully decorated with thin red stripes, I expect and generally find peppermint flavor. Here are associations resulting from custom, as there are no natural laws governing these combinations.

However these customs have come about, they are fairly well established in the minds of consumers of candy—so much so that the mere suggestive influence of a color has been known to take the place of flavor in the batch. I once examined some hard candy in which citric acid and yellow color were all that had been used to produce a lemon flavor. The psychological effect of the yellow color and acid taste supplied the deficiency of lemon oil to the unsuspecting customer. It would be tough on the manufacturer who depends on color to suggest flavor if his customers should inadvertenly eat some of his candy in the dark!

Because of the potent psychological effect of these traditions, confusion and consternation reign when an error occurs and a batch colored for peppermint, for instance, is flavored with lemon. Such mistakes have happened, with most interesting results. The finest Messina lemon has been libeled as "rancid," "weedy," "fishy" and several unprintable names, just because it was poured into a batch of white hard candy with bright red stripes! And most of the victims who tried this awful combination would not believe that lemon oil had been substituted, but were sure that the peppermint oil was bad!

Definite color associations have distinct advantages, chiefly because each flavor is easily identified by those people who are

looking for their favorites or avoiding one especially distasteful. For this reason an attempt to change colors or an error in coloring a batch does not make the manufacturer particularly popular with his customers.

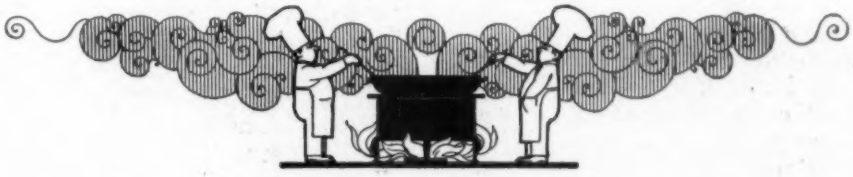
The unfortunate side of the question is that there are not enough colors to go around. Red might be strawberry, raspberry, cherry or even cinnamon or cassia. Brown might be coffee, maple, molasses or chocolate.

The use of a bright red for cinnamon is hardly justified, there are so many combinations which might be used instead.

Bright colors in hard candy are vitally important in selling the candy. For this reason the manufacturer must use care in selecting colors of assortments and individual pieces to avoid color clashes or the use of colors which create a definite sales resistance. For example, deep blues or purples do not appear to go so well, notwithstanding their natural occurrence in the grape, the blackberry and the huckleberry. Gray and black alone are also unattractive in candy, although both may be effectively employed in creating contrasts. The association of black with licorice has in one sense helped the sale of licorice by readily identifying it to its devotees, and in another sense hindered its development because of its sombre appearance. The licorice manufacturers realize this and have considered the advisability of trying to wean the public away from this association by omitting black color altogether in making pure licorice candies. Licorice root has sufficient coloring principles of its own and these result in a rich brown shade, actually more attractive than the conventional black.

I believe that hard candy would be more popular if there were an accepted color standard for each flavor, particularly the spice flavors for which the majority of candy eaters entertain decided likes and dislikes. The N. C. A. would perform a genuine service to the industry by appointing a committee to adopt Color-Flavor Standards, to the end that uniform combinations might be employed by all manufacturers, and thus avoid a situation where one candy maker colors his sassafras pink, while another uses lavender.

The industry is spending substantial sums of money for advertising to create public goodwill toward candy; to convince the public that candy is pure. Why deliberately use colors which are so obviously unnatural as to alarm the customer that artificial colors have been used? The fact that we know these colors to be harmless and serve legitimate and even physiologically healthful purposes in the candy is hardly sufficient reason for awakening all these unnecessary suspicions and prejudices in the customer's mind. Let all candy colors at least seem natural in order that they may more effectively please mind and eye, and thus add to the aesthetic as well as gastronomical enjoyment which one expects to derive from the contemplation and consumption of a beautiful package of candy.



Balky Coatings

and why they balk

By EUGENE B. EDWARDS

THERE is perhaps no other important raw material which worries the candymaker more or one which has less technical control behind it to insure unformity than his chocolate coating.

This lack of uniformity, if confined only to a slight change of color or flavor, could perhaps be overlooked but it goes further and is much more in evidence in the texture, working and keeping qualities. Coatings which have been running for weeks so well as to have become part of the factory routine, will without warning, become balky and exhibit every one of the many stunts a bad coating can perform, and many dollars worth of valuable time and material will be wasted.

Why does a coating go mushy, livery, thick? Why does it dip perfectly but dry off streaky, dull or with the coating falling off into a wide ring at the bottom? Why do dipped goods leave the factory perfect, a shining work of art and come back shortly looking years old? The answer is that chocolate is a complex product and unless handled carefully and with knowledge from the bean to the consumer's mouth is susceptible to changes of structure which bring about the ills enumerated.

Lowered Quality Troubling Chocolate Makers

The first care is, of course, in the hands of the coating manufacturer. The majority undoubtedly do put great care in the selection of their raw material and in the control of the various processes of manufacture, particularly so on the better grades of coating. However, even they are

Our artist's conception of the unstable fats pressed from low grade cocoas—one of the reasons why coatings "balk"

apt to be careless at times in an attempt to cheapen processes and use cheaper raw material, in order to meet competition in the lower grades of coating.

If the truth may be told, these irregularities are troubling the chocolate manufacturer as much as the candy manufacturer, and as the rise of raw material prices continues coincident with a lowering of his returns, he is forced to use more and more of those constituents which cause the trouble. In the early days of the industry the use of cocoa beans was confined to those grown principally in the north of South America and the Islands of the West Indies, i. e., Arriba, Maracaibo, Caracas, Trinidad, etc., all of practically one type, and rather prone to diseases and pests. As the industry grew, these older districts could not keep pace with the demand and new producing areas were opened up. These new plantations—Accra, Lagos, Bahia, etc., desiring to keep clear of the troubles encountered by the older ones, searched for a hardier tree, and found it. This variety, Forastero, had a larger yield and was

hardy but differed entirely from the Criollo. The beans lacked the aroma and flavor of the old favorite and, this is the important part, the cocoa butter contents of the beans was very much softer.

Cocoa beans are composed of approximately equal quantities of various carbohydrates and fats with moisture. Cocoa butter is a complex fat and while the highest percentage is confined to two or three types (Stearin, Palmetin and Olein) there are numerous intermediate types. Each fat melts at a different temperature, some being at all times soft and some liquid. The proportions of the different types of fat vary with the kind of cocoa bean and according to whether they are of the Criollo or Forastero type, the Criollo type containing the larger proportion of hard fats.

It can be readily seen from the foregoing why there should be such a variation in the melting and hardening temperatures of different chocolate coatings and why a good coating made with a predominating percentage of Criollo type beans will set quicker and keep better than a coating made from the cheaper types of beans. This superiority is in proportion to the amount of liquor in the formula, provided ordinary commercial cocoa butter is added for the balance of the fat constituent.

Splitting of Unsaturated Fats

Nor is the change in melting temperature the most important in this swing away from the old type beans. The softer fats which predominate in the cheaper type cocoas are those termed "unsaturated," and are of such an unstable construction as to be subject to easy chemical reaction. These reactions occur mostly in the presence of moisture and heat.

All fats are a combination of fatty acids and glycerol. These fatty acids react in much the same way as the better known acids and it is the splitting of this combination and the forming of new ones which causes some of the troubles which we are discussing. The majority of these chemical changes are slow in operation so that a chocolate coating, which was apparently good on being moulded, will, after being in storage for some time, develop an offensive odor and a gelatinous consistency, entirely contrary to what would be expected to take place during the storing of a coating.

Many of the changes in the structure of the unsaturated fats take place during the roasting of the beans and although much of this is driven off in the process, the natural moisture of the bean acts to alter the make-up of quite a large percentage of that which remains. High roasting undoubtedly does not improve a low fatty acid series even if it does hide the off-flavor of poorly fermented or mouldy beans and help make the grinding and other process easier and quicker.

The older method of roasting, and the one still used in the manufacture of many high grade coatings, was to heat the beans only sufficiently to drive off the moisture and free the shell. Where Criollo type of beans were used as was usually the case (there were fewer beans of the Forastero variety available in those days) a large proportion of the volatile fats was driven off in this light roast, most of the remain-

If Butter-pressers Took Their Cue from the Oil Refiners:

That many of the newer types of beans have a fat content composed principally of unstable constituents is no reason why they should be banned provided the butter presser takes a leaf out of the book of the oil refiner. These cocoa fats can be successfully rebuilt, as are many others today, some of which are being used to offset this very weakness in cocoa butter itself

der being left to evaporate during the processing.

There are many other causes for this spliting of the fatty components of the cocoa bean. Some of these begin to function as soon as an otherwise ripe, well-fermented bean is bagged, moisture being an inherent factor in most instances since moulds cannot grow nor enzymic action take place without it.

Rebuilding the Inferior Fats

That many of the newer types of beans have a fat content composed principally of unstable constituents and that many of these beans are handled carelessly in shipment is not necessarily a reason why they should be banned, but the chocolate industry must take a leaf from the book of others using fats. These cocoa fats can be *rebuilt*, as are many others today, some of which are being used as adulterants, to offset this very weakness in cocoa butter itself.

Mushiness and poor working quality of a coating due to the use of poor cocoa butter and beans are among the more prevalent troubles today but there are several others which are also annoying and likely to occur even in coatings containing the best materials but improperly manufactured or stored; these, too, are only apparent in the presence of moisture. The starch of the cocoa bean (about 10 or 15 per cent) is cooked during the roasting process and in the finished chocolate it is present as a series of dextrins. Dextrin, better known as starch glue, has a great affinity for water and when it gets it, becomes sticky. It is these cooked starches which thicken up a chocolate syrup or a cup of hot chocolate. Another cause of thickening is the extremely acid character of some cocoa beans. Practically all of this acidity can be eliminated by proper roasting and subsequent storing of the chocolate liquor. Since this is rarely effected, the acid frequently remains behind to cause trouble, not only with the bean constituents, but with the cane sugar which is incorporated with it afterwards. Under these circumstances, a portion of the sugar becomes hydrolyzed, forming invert sugar with a pronounced affinity for moisture. This process will continue as long as there is water and sucrose present.

Both of these causes of thickening can be corrected to some extent by a slow drying process, such as running in a hot kettle, or if the trouble is too acute, by regrinding with fresh chocolate.

The next article in this series by Mr. Edwards will be "The Working Sample—as a Practical Guide to the Selection of Chocolate Coatings." If you are a buyer of coatings, you should not miss it.—THE EDITOR.

It Will Pay You to Go Trouble-Shooting with Mr. Edwards

Are YOU experiencing any of these difficulties with your coatings? Have you had coatings go suddenly mushy, livery, or thick? Have you a coating which dips perfectly but dries off streaky, dull, or with the coating falling away from the center in a wide ring at the bottom? Why do dipped goods leave the factory a shining work of art and come back shortly looking years old? Mr. Edwards, formerly Vice President of Sanpeco Chocolate Company and production manager of the N. Y. Eskimo Pie Corporation, puts the coating problem in a new light.

Future articles by Mr. Edwards include:

The Working Sample—as a practical guide to the selection of coatings.
Illipe Butter as Cocoa Butter Substitute.
Going Modern—Mr. Edwards tells where to go for our ideas.
Air Flotation in Cocoa Powders.
A Comparison of the Current Methods of Extracting Cocoa Butter.
Can the Colloid Mill Be Adapted to Chocolate Milling?

Ask Me!

Every month the Ask Me Editor asks ten questions which every intelligent candy man should know. How do YOU rate on these questions?

1. Which of the vitamins have been isolated or secured in concentrated form for commercial use in food product manufacture?
2. Brown & Company have a chocolate dipping room 25 ft. by 40 ft. by 12 ft. high. How many tons of refrigeration will they require to cool air having an original temperature of 80° F. and 80 per cent humidity to a 65° temperature and 40 per cent humidity?
3. Which of the nutmeats extensively used in the candy industry is of strictly American origin? Which flavoring ingredient?
4. Apart from its valuable emulsifying and chocolate bloom retarding properties, what physiological or dietetic value would be derived from the introduction of lecithin in "health" candies?
5. What recent activity of the National Confectioners' Association has been dubbed "the flying circus"?
6. What conditions tend to make chocolate take on moisture?
7. How can the whiteness of dextrose batches (sucrose free) be readily controlled?
8. Which of the more important national women's magazines have taken a distinctly favorable attitude toward candy in the diet and refused to accept cigarette advertising on the ground that cigarette-smoking is harmful to women?
9. What well known children's specialist has gone on record within the past thirty days as favoring candy in the normal diet of children?
10. (a) What is the chief function of the "sunlight vitamin." (b) Why is Codliver oil so full of it? (c) How does sunlight create it in our bodies?

Answers to October Questions

1. *How is fondant now handled in a continuous flow from cooker to Enrober belt without "sweating"?*

Ans. By means of the Baker-Clay continuous fondant process.

2. *What precaution must be observed in connection with water which is likely to come in contact with fondant at any stage after the cooking process?*

Ans. It must be boiled.

3. *What is the safe tolerance or maximum dextrose content of an all-dextrose marshmallow?*

Ans. 55%. (See "Refined Dextrose as a Marshmallow Ingredient" by John M. Kruo.)

4. *How can all-dextrose marshmallow be kept white?*

Ans. By cooking it "on the acid side." This may be done in the case of an all-dextrose product, because dextrose cannot be inverted.

5. *Why is a "remelt" cream always superior to a "bob"?*

Ans. Because the addition of a bob "dilutes" the cream, weakens the whole structure basically, and usually lowers the density of the syrup phase, permitting ready invasion by yeasts and fermentative bacteria.

6. *Why are coatings made from the higher class cocoa beans usually more immune to factory troubles than coatings made with the cheaper basic cocoas?*

Ans. Because the quality cocoas (Cocollo, etc.) contain a higher proportion of the hard fats. Consequently, coatings made from them are not only more resistant to "bloom," but are likewise less susceptible to mechanical difficulties in handling than coatings made from the garden variety of basic cocoas.

7. *What ingredient widely used in confectionery manufacture contains a substance which can be "irradiated" with ultra-violet light to*

(*Continued on page* 59.)

ACCURATE and Uniform Coating and Cooling mean GREATER profits . . .

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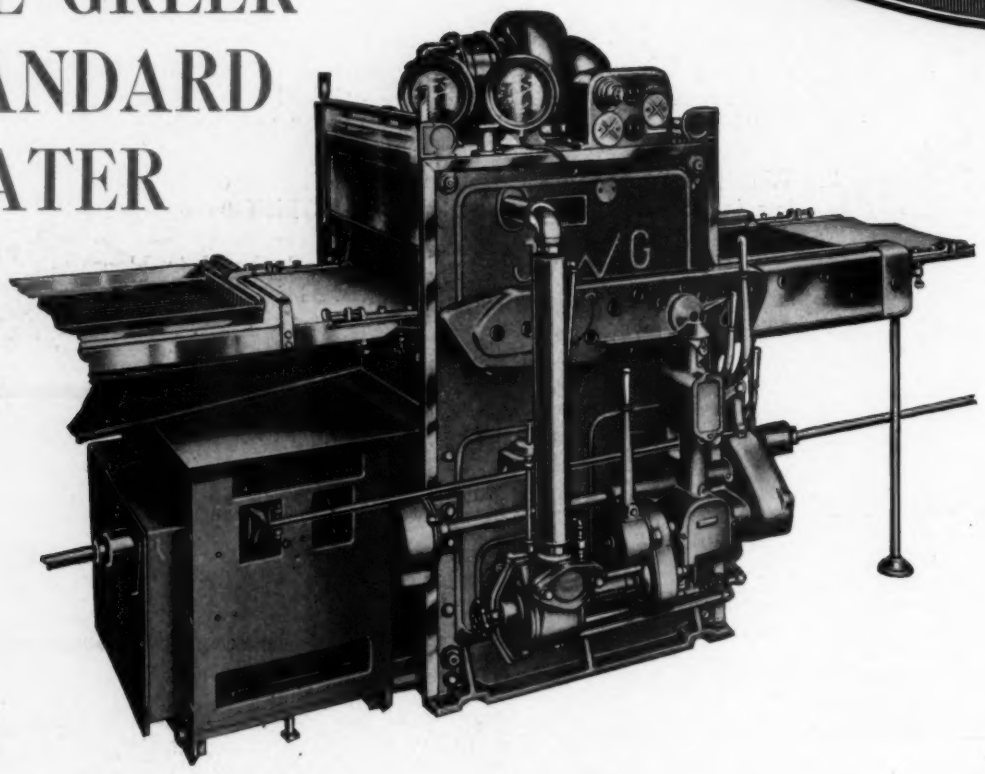
that pa ta

THE GREER STANDARD COATER



There are doubtless many ways of increasing profits yet one of the most obvious ways is usually very reluctantly used—the replacement of obsolete machinery with the latest and most efficient available.

The manufacturer who can produce the best coated goods with the least Labor, Material and Waste is going to win out in the long run.

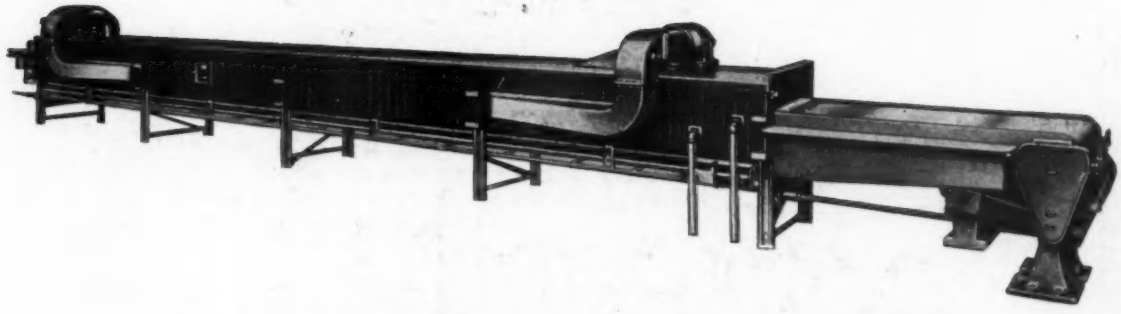
Are you operating your Coating department under a handicap? If it is not equipped with Greer Coaters you are! The Greer Coater is noted the world over for its accurate and uniform coating, its large output of high quality goods, its remarkable freedom from mechanical troubles—hence small upkeep,—and its ease of operation.

J. W. GREER CO
Manufacturers of Confecti
Machinery th Pays Divi

119-137 Windsor Street CAM

EER
Machinery
Dividends

UNIFORM COOLING Irrespective of Weather Conditions . . . . . .



GREER COOLING TUNNEL

In order to be classified as a good chocolate it is necessary for a center to be good in the first place, and then it must be coated and cooled correctly. A wonderful center can be absolutely ruined by imperfect coating and cooling or it can be made into a product of which you can justly be proud. Is it wise to take a chance when you can be certain simply by coating and cooling your centers on Greer machines?

The J. W. Greer Co. has specialized in chocolate coating and cooling equipment for several years. Many of the leading confectionery manufacturers have found that the installation of Greer Coating and Cooling machines has eliminated their troubles.

The results we have obtained for others justify our assurance that we can help you.

You incur no obligation by asking for our assistance.

ER COMPANY
...rers of Confectioners'
...th Pays Dividends
...et CAMBRIDGE, MASS.

Tying in with the National Advertising Campaign

By DANA M. HUBBARD

ANYONE who had any experience in planning or preparing advertising knows how simple and ridiculously easy it is to map out an advertising campaign on paper. The difficult thing is not mapping it out on paper. Making it work out at a net profit is what counts.

The aims and objectives of the campaign can usually be agreed on with little debate. After that? "Here is your market, gentlemen. And here are the specific groups who buy or control the buying in this market. Now these—these are the logical channels of approach to these groups. Finally, our copy naturally builds itself around these persuasive appeals."

Could anything be smoother? Let's go!

And yet between this business of mapping out the campaign so prettily on paper and the methodical, productive working out of the campaign what a multitude of slips there can be. And usually is.

What Rocks the Boat?

Delays. Lack of co-ordination. Indifference. Details that because they are everybody's business become nobody's. Slow collections, if the advertising happens to represent a co-operative effort. These are some of the deadening, undermining influences that, all too often, shoot the original advertising plans so full of holes the fathers of these plans can hardly be blamed for not recognizing their brain children.

This afternoon I asked a candy jobber who has a reputation for being on his toes to tell me some of his ideas about the industry's national campaign and practical methods of tying-up with it. Now he is an intelligent jobber. He has spent enough years in the business to know that the best way he can build business for himself is to make better merchants of the dealers he visits. In addition he's a natural-born optimist.

There's no need for attempting to recount here in detail what he told me in reply to my questions. He thought the National Confectioners' Association advertising was "O. K." Probably doing a lot of good. Sure, manufacturers ought to hook up with it. So ought retailers. And more than this my deponent said naught. The net of it, I concluded, is that the N. C. A. national advertising hasn't yet gotten under his skin. While it would be an error to say that he is indifferent, it is just as plain as a horse in a ballroom that he is a long way from being hot on the industry's co-oper-

LADIES' HOME JOURNAL. November, 1929

Children and Candy

By S. JOSEPHINE BAKER, M.D.

THERE is a definite danger in discussing one article of food. The very fact that it is being talked about seems to give it undue importance and to overaccent its advantages and its disadvantages. Nowhere else is this more true than when we speak of candy and particularly of its use during childhood. But this is an important subject, for we are fast becoming a nation of candy eaters and our indulgence in this sweet-tooth habit is something to be reckoned with.

Our consumption of sweets has risen and is rising to an unprecedented degree. The amount of sugar used in the United States during the six months ending June 30, 1929, was 6,574,400,000 pounds. This figure represents an increase of approximately 6,000,000 pounds over the amount we used during the first six months of 1928. At this rate of consumption, it is probable that more than 13,000,000,000 pounds of sugar will be used in this country during this one year. It has been estimated that 8 per cent of this sugar, or 1,040,000,000 pounds, is used in candy making. Seventy per cent of the total sugar production—including the 8 per cent used in making candy—was consumed in household use; the remaining 30 per cent was used for manufacturing purposes. These figures are staggering in their extent and import. We do not know what proportion of this vast output of sugar is consumed by our children, but we do know that active children crave sugar and we ought to know how much or how little they should have to meet their body needs and to maintain the balance of health.

We used to think of candy eating as either a luxury or a bad habit. Today we are having brought to our attention the merits of candy and sugar as foods and their essential and habitual use as part of a normal diet. We have thought of sweets as fat-forming foods, and so they are if we indulge in them to excess and fail to use the energy they produce. Now we are told that candy takes its place in the best type of "reducing" diet. That is true also. These seeming paradoxes and the confusion that still besets some of us about this matter of eating sweets is due to the perfectly natural misunderstanding regarding the place of sugar as a food, in itself and when combined with other foods.

Sugar and Energy

WE ADULTS, unfortunately for most of us, are a law unto ourselves in this matter of diet. We must stand or fall by our right decisions or by our errors in judgment. But children are not a law unto themselves; we make their laws for them. [illegible] people may be reasonably safe [illegible] we make errors that cost us some [illegible] indication that our ways [illegible] wrong direction [illegible]

agreed upon the subject, but the points of difference are growing fewer and fewer and the use of sugar during childhood is being recognized as of immense value in it proper place and in the proper amounts.

First of all, we recognize that sugar is an important and necessary part of the diet during childhood; in fact, it is doubtful if proper nutrition can be maintained without the inclusion of sugar in some form in the daily ration. The craving that children have for sweets is an expression of a definite body need. Children expend energy with a prodigal hand. If we are to give them the strength to meet this expenditure, their bodies must have a large reserve supply of energy-producing elements and an additional sufficient amount for immediately available use.

This reserve supply is made possible by the inclusion of sufficient fats and starchy foods in their diet. The starches, by a chemical process within the body, are turned into sugars. The fats provide a substance which can be, in conjunction with the sugars, turned into energy. The production and use of bodily energy can be compared to the process which takes place when coal is burned in a furnace and so produces heat. The fats in our bodies can be likened to the coal; the sugars to the flame which consumes the coal. The resultant energy which is produced is equivalent to the heat which the furnace gives forth when it is well stoked. This steady supply of reserve energy within the body is usually enough to meet the requirements of ordinary life, but it is not enough to provide for the needs of marked physical activity. An additional amount of quick energy-producing food in readily available form is essential or the vast expenditure of energy that is common in childhood will result in such a drain on [illegible] body resources that weakness and [illegible] will result. This quick-en[illegible]

in green vegetables, cereals and in nearly all other foods are necessary to build strong bones and sound teeth. The fatty foods and the carbohydrates, including the starchy foods and sugar, will produce strength and energy.

This question of adding sugar to the diet of children has met with the opposition that comes as a result of a puritanical hang-over in our habit of thought. I can remember the time when any person who had a fever was refused any water to drink; now water is the most potent weapon we have in our fight against fever. Much the same unenlightenment is encountered in this matter of children and sweets. It is a sort of subconscious belief that what we want most cannot be good for us. Happily, we are progressing to the point where we recognize that bodily cravings have a reason. In the case of craving for sugar that reason is a normal physiological need. During childhood it is imperative that this need be met without any disturbance of nutrition, of digestion, or any other bodily harm. Our only question can be: How may we give the right amount of sugar to our children and in what form? What mothers must know is the dividing line between right use and abuse.

Granting therefore, as we must, that sugar is as important an article in the diet of children as any of the other foods, let us see how much of this energy-producing food is a natural part of the balanced diet. Fruits contain sugar; milk contains sugar; all the starchy foods including bread, cereals, potatoes, peas and beans and the other legumes are capable of turning into sugar through the process of digestion. This latter form of sugar is then stored in the liver until it is needed.

A Balanced Diet

WHEN sugar itself is eaten, it has been shown by experiments made at the Minnesota Experiment Station, that 98.9 per cent of the total energy it produces is available for the use of the body almost immediately after it is received into the stomach. That a child must have sugar for his needs is assured. A balanced diet will provide the amount needed for the reserve supply to be called upon when necessary. For the quickly available fuel needed for excess energy, sugar in some form should be added to the diet. Some of this may be given in the form of desserts, in jam or jellies, some for sweetening other foods and some may be properly given as candy.

One of the [illegible] arguments against candy [illegible]

Current articles appearing in consumer publications in favor of candy furnish a valuable background for the advertising efforts of the confectionery industry at this time

ative advertising and the subject of tying-up with it.

Borrowing Successful Ideas

Other industries have advertised co-operatively; and some of them, a minority, have advertised successfully. In many cases the same tie-up objectives that the candy industry is shooting at were sought. Isn't it likely that some of these industries can help out candy? The paint people, for example, seem to have induced a number of individual manufacturers to link their separate advertising efforts to the co-operative effort of the whole industry by using the familiar slogan, "Save the Surface and You Save All." Probably everyone has seen the window and store trim material that the various associations of fruit and vegetable growers use to drive home *at the point of sale* the story they tell in their national advertising. Then there are the florists with their priceless "Say it with flowers." Offhand I should say they have been remarkably successful in getting an impressive tie-up between national advertising and local sales promotion effort. And offhand I should say that the candy industry, or that part of it which has any serious interest in results, could learn some helpful lessons from the other industries that have possibly had more experience in selling via national advertising.

Right here it may be well to emphasize one thing. This comment on the subject of tying-up with the national advertising campaign aims at conveying nothing but admiration for the manner in which the industry's efforts to build itself and to protect itself from being made a football of other industries have been conducted. The job has not been anything like 100 per cent. None is. Candy's story should be in more publications. Better tie-up material should be offered to merchants. More field representatives are needed. The advertising needs to be brought home with greater force and greater clarity to retail candy stores. And these necessary things are to be done, I understand, just as soon as the funds are available. It is essential that they be done if the industry is to cash in adequately on the advertising investment it has already made.

Not a Criticism of N. C. A.

No, indeed. If there is criticism of an unfavorable nature in these paragraphs, it is directed at the individual manufacturer for the most part. For he has not exploited the industry's national advertising. Furthermore, he is a heavy contributor to the retailer's apparent indifference to the topic of cashing in.

Possibly you, reader, know of dealers who are not indifferent to opportunities to boost their sales. There are many. Yet within the week I spent a half hour talking with a keen, sensible woman who manages a retail store in a city of some 300,000 people. She is a merchant, and no mistake about that. Her business earns a decent profit. She knows the N. C. A. is spending some money for national advertising. The copy is fine, she says, and she thinks the illustrations can't help making people want candy. But the thought has never occurred to her that (1) if she tied up with this advertising, she could sell more candy, and that (2) most of this sales increase would be profit, since her overhead would be no greater with the added volume than it is now.

You tell me who's at fault in not showing this above-the-average business woman how to use the advertising that the N. C. A. and various manufacturers are placing in magazines, newspapers and on the poster panels. Someone who can talk briefly, simply and honestly about advertising needs to tell her about using the acceptance for can-

dy that so much money is being spent to create.

Blazing the Trail

After all, the logic of the thing is not complicated. National advertising, skilfully done and rightly placed, does mold public opinion. It familiarizes people with the names of manufacturers and their products. It tells people useful, helpful things about health, for example. It helps establish higher standards of living. All these truths must be self evident, but if necessary they are susceptible of convincing proof. In addition, carefully planned, well executed advertising for products that actually possess merit sells them in volume—in profitable volume for manufacturer and dealer alike. People invariably prefer the known to the unknown. Therefore they buy the advertised product, and if it is what the advertisement says it is, they keep on buying it. Try to sell them something else.

Now, if national advertising is a useful force; if it really does plant sales-building impressions in the minds of buyers, why not ride along with it? More than that, why shouldn't I, a dealer, try to harness it and make it pull for me?

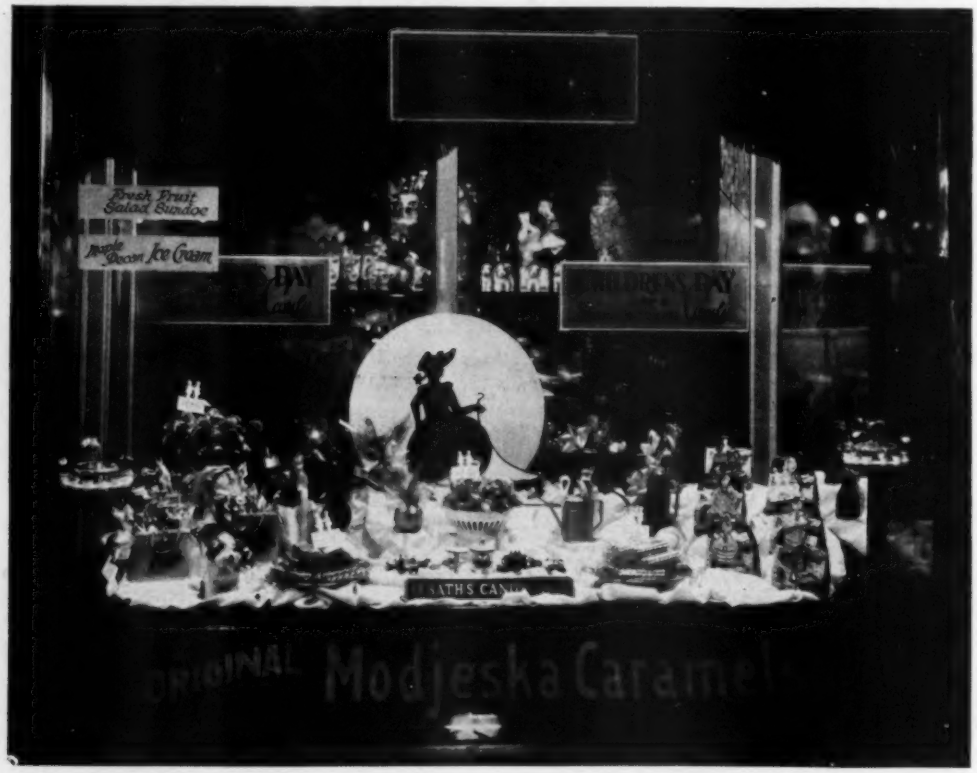
The consumer thumbing over the pages of a national magazine comes, let us say, on an interesting page advertisement which talks about candy. No particular brand of candy, just good, wholesome, palatable candy. The illustration shows that candy, only it makes it a hundred times more appetizing, more mouth-watering than words can. An impression has been made—a favorable impression that will make it easier for some merchant to sell candy to that reader.

A little farther on in the magazine the reader comes on another candy advertisement, this time descriptive of some particular manufacturer's candy. Pretty convenient for this manufacturer to have his advertisement here. Less sales resistance to his story. The reader is in a friendly, favorable frame of mind. His illustration looks doubly attractive. His copy writer's adjectives paint happier pictures. And the impression that his brand name makes is just a bit deeper, especially if he happens to have repeated some phrase, some slogan or some illustrative idea that appeared in the first advertisement the reader saw.

How Repetition Motivates Sales

This afternoon the reader will walk down Main Street and look in the store windows. To all intents the magazine and its advertisements are out of mind. But here is a store and on its window is a streamer with a now familiar phrase about candy. Or a reprint of one of the candy advertisements that the magazine contained. Inside the store there may be more reprints in plain view and packages of that brand the advertisement talked about so compellingly. How much more chance there is that our magazine reader will walk out of the store with a bag or a package of candy for having had these several impressions planted. And don't you suppose it's money to muffins that the brand of candy contained in that box or bag stands a pretty fair chance of being the brand advertised?

Ah, well, we've rambled a bit,



A prize window tying in effectively with the National Campaign

haven't we? To get back to specific tie-ups, what do merchants want? Most manufacturers have sales managers and advertising managers whose job it is to be on the alert for ways to increase the salability of their employer's merchandise. Frankly, if they can't see the positive value of tying up with the N. C. A. national advertising, there's not much use arguing with them about it. But retail merchants don't have sales managers and advertising managers so often. Therefore the only safe way to find out what they want, need and will use in the way of tie-up material is to go to them and find out.

Sidney Carter, who manages the merchants' service bureau for Rice-Stix of St. Louis, knows some interesting things about what merchants want. Rice-Stix is not a candy concern, of course, but a good many of the things that Mr. Carter has learned from his contacts with merchants contain an idea for the candy industry. Recently he sent a list of questions to 5,000 merchants. Fourteen per cent of them answered his questions.

Plans Based on Retailers' Needs

"Merchandise is not sold until it reaches the consumer, and our interest is closely tied up with that of the retailer," says Dr. Carter in explanation of his company's viewpoint. "The good-will resulting from a sincere effort to co-operate with the retailer has been instrumental in bringing us thousands of dollars of business. That we know. But we do not believe it desirable to try to formulate plans which the retailer cannot use. In order to avoid that we must know what problems present the greatest difficulty to the dealer and seek out ways of finding and transmitting information on those problems."

Of the 621 merchants who filled out Mr. Carter's questionnaire and returned it to him, 434 wanted window display materials; 398 wanted store promotion ideas; 370 wanted advertising help; 293 wanted material that they could use in training sales people; 197 wanted information about show card writing; 185 wanted store editorials, and 150 wanted proofs of cuts, presumably proofs of cuts that they could use in their own local advertising. I am giving here only those helps requested by Mr. Carter's correspondents that seem applicable to candy merchandising. As he says himself, by way of comment, "those factors primarily concerned with selling and store promotion, namely, window display, store promotion ideas and advertising, come first in merchants' minds."

Lest it be assumed from what has gone before that the National Confectioners' Association has been remiss in producing in circulating tie-up material, I want to make it plain here that the association is doing splendid work toward making the retailer a better merchant. This work must continue on a larger scale.

The prospect, it may be said, in conclusion, is full of promise. Reliable sales reports from 483 manufacturers for August, 1929, show that sales were 17.4 per cent higher than sales in August, 1928. They were 30 per cent higher than July, 1929.

Candy, after feeling some of the effects of what so many economists loved to call the New Competition, is not losing ground or standing still. The public's knowledge concerning candy has expanded tremendously since the first shots in the association's campaign were fired. What is needed now is a tenacity of purpose on the part of the industry as a whole, a realization that the industry has made an investment which must be protected and utilized and more especially a consciousness on the part of the individual manufacturer of the opportunity that exists for him in making every piece of his advertising share in the co-operative campaign's benefits.

W. E. Lowell with Heit-Miller-Lau Co.

W. E. Lowell, formerly Western manager of Bentz Engineering Corporation, is now associated with Mr. W. C. Dickmeyer in the Heit-Miller-Lau Co., of Fort Wayne, Indiana.

Mr. Lowell is a competent production engineer, specializing in air conditioning. He has made many close friends throughout the candy industry of the Central West, who will be glad to know that he has settled down with an opportunity to work out his own pet ideas with one of the most substantial and highly respected manufacturers in our industry.

Cooling & Air Conditioning Corporation, 11 West 42nd street. New York, N. Y., announces that W. H. Doron, formerly sales engineer in the ice machine department of the De La Vergne Machine Company, has entered its organization as sales engineer, specializing in the application of air-conditioning equipment to industrial processes.

D. H. Proctor Now with Dry Milk Institute

Appointment of D. H. Proctor of Chicago, to succeed C. S. Darling, who has been in charge of information service for the American Dry Milk Institute, has been announced by Prof. Roud McCann, director of the Institute.

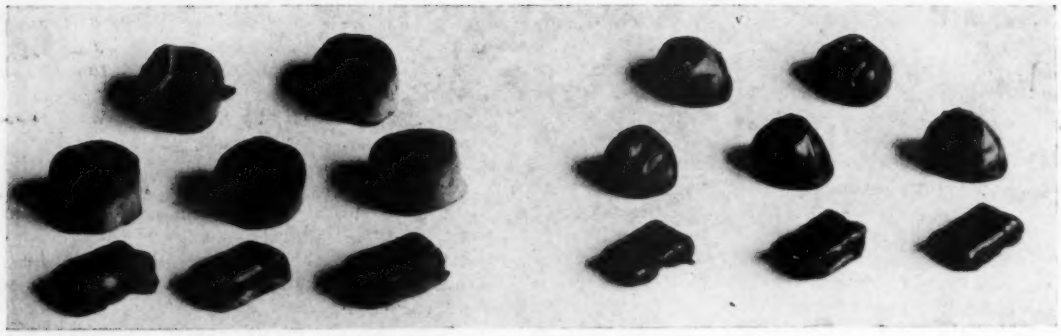
Mr. Proctor has an intimate knowledge of the American food industries through seven years' association with the McGraw-Hill Publishing Company, largest publishers of business papers in the world, in behalf of whom he specialized in advertising and merchandising of food products and in food factory equipment.

Sylvania Industrial Corporation announces the acquisition of the business of Birn & Wachenheim, well known throughout the paper trade as agents of the Societe de la Cellophane of transparent viscose paper. Sylvania will continue for the time being to import the product under the trade mark "Fenestra" and are taking over the Birn & Wachenheim sales and office staff.

Carrier Incorporates in Texas Opens Office in Dallas

The Carrier Engineering Corporation of Newark, New Jersey, has announced the opening of a permanent engineering and sales office and shop at 2706 Commerce street, Dallas.

Mr. Thos. M. Cunningham, who has supervised many of the installations which we have made in Texas, is manager of the new office. Mr. William Moler, a native of Texas, with a background of experience in the home office of the company, and in the Los Angeles and Chicago branches, will be associated with Mr. Cunningham.



Startling results of a lecithin experiment which gives promise of dispelling the age-old "bloom" bogey of the candy industry. Both sets of samples made with the same coating were subjected to identical temperature conditions in a Freas electric oven. The sample at the right contained a fractional percentage of commercial lecithin

LECITHIN

A New and Unusual Weapon in the War Against "Bloom"

By SHERMAN WOODROW

THERE is now available a preparation which may go a long way towards solving the confectioner's age-old problem—fat bloom on chocolate.

The cases of fat bloom have been studied by many chemists, and several technical articles discussing these causes are in the literature.*

It has been established that bloom is caused by the crystallization on the surface of chocolate of the lower melting fractions of cacao fat brought to the surface in the liquid phase. While there are several theories as to the reasons for this appearance on the surface of these fractions, the fact remains that they do get there and in order to get there must have become separated from the higher melting fractions at a time when the chocolate was at such a temperature that they were liquid while the other fractions were in the solid phase.

Therefore one possible solution of the bloom problem lies in finding a method of preventing the separation of the various fractions of cacao fat or cocoa butter, when it reaches temperature below its melting point but sufficient to melt the oiler fractions.

*Whymper & Bradley—"The Setting of Cacao Butter, etc."—*J. Soc. Chem. Ind.*, 1926-1927.

The problem is complicated by an interpretation (Food Inspection Decision No. 191) of our national food and drugs act which prevents the addition of any fat other than cocoa butter to pure chocolate. It is further complicated by the conditions surrounding the manufacture and use of candy. In other words, nothing can be added to chocolate which will interfere with its working qualities in the factory or impair its flavor and aroma. This last complication imposes the restriction that anything added to chocolate which might solve the problem must be odorless, tasteless, and have the same working properties as cocoa butter, or else must be so effective that minute additions will achieve results.

Lecithin Makes Its Appearance

The appearance on the market of a concentrated lecithin product makes available an agent which may solve this vital problem. Lecithin (or protagon) is a complex organic compound which is very widely distributed throughout the animal and vegetable kingdoms. It is present in small quantities in the human body, especially in the brain and nerve tissue. It occurs in considerable quantities in egg yolk and is found in the seeds of most plants.

Dr. Rewald to Give Us His Views on Lecithin

In preparation at the present time is a series of four articles on lecithin by the world lecithin authority, Dr. Bruno Rewald, of Hamburg, Germany. Readers of THE MANUFACTURING CONFECTIONER will be privileged to hear the facts of this remarkable discovery expressed with scientific accuracy by the fountain-head of the commercial lecithin industry. The subject will be treated from the standpoint of 1: its physiological relation to the human body and the possibility of its employment in the manufacture of health candies; 2: the potential uses of the substance as a general emulsifying agent and as a colloid; and, 3: its present practical applications in the chocolate and confectionery industries.

The present article by Sherman Woodrow is in the nature of a brief preparatory discussion to acquaint the reader with some of the experimental work already performed with lecithin in the chocolate industry, and the obstacles remaining to be overcome before the use of the new product is made foolproof and therefore universally acceptable as a weapon in the war against "bloom."

The series by Dr. Bruno Rewald will appear exclusively in THE MANUFACTURING CONFECTIONER.

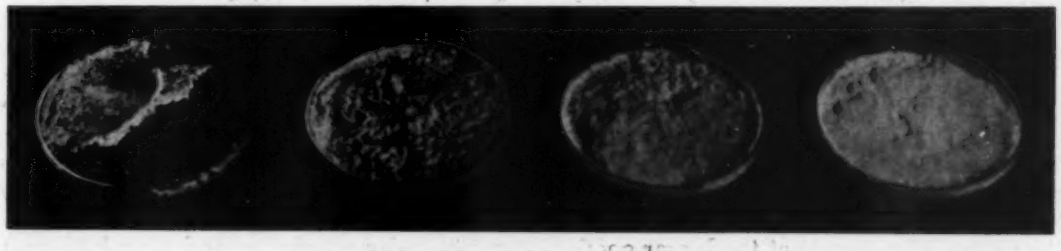
Chemically, its composition is probably that of a glyceride in which one of the fatty acid groups has been replaced by a complex acid containing phosphorous and nitrogen. On hydrolysis it gives a fatty acid, glycerophosphoric acid, and the base choline. It is soluble in alcohol, and forms a colloidal solution in water and in melted fat.

The commercial preparation is of waxy consistency and contains approximately 60 per cent lecithin. It has a faint odor and a bland, oily flavor. Small amounts of this preparation dissolved in cocoa butter impart to it very remarkable properties. The resultant fat acts more like a single compound than the mixture of fats which cocoa butter is known to be. In order to provide a visual demonstration of its action on cocoa butter the following test was made. A butter of good quality was melted and divided into four portions. To three portions lecithin, was added in the proportion of 0.1 per cent, 0.2 per cent and 0.3 per cent while the fourth was held as a control without lecithin. The four melted butters were poured into petri dishes and placed in a constant temperature oven at 82° F. for 24 hours. The accompanying photographs show the condition of the samples after this time.

Visible Results

Number 1 is the pure cocoa butter from which the higher-melting portions have crystallized leaving the lower fractions as an oil. Number 2 has 0.1 per cent lecithin. Large crystals of fats have formed and small amounts of "mother liquor" oil are surrounding them. Number 3 has 0.2 per cent lecithin. This has solidified completely but shows the large crystals of fat which were first to form. Number 4 has 0.3 per cent lecithin. In this sample (which has entirely solidified), the fat crystals are very small and the mass is nearly homogeneous. This test indicates that the presence of small amounts of lecithin in cocoa butter tend to prevent the separation of

(*Continued on page 63.*)



Eric Lehman:

Stresses the Pocket Package as a Means to Added Sales

IT seems to be the prevailing idea that a pocket package must be one containing chocolate peppermints. This thought was impressed upon me most forcibly during my endeavors to pick up a representative assortment of pocket package goods. In nearly every store I visited, I was confronted with peppermint packages. A few had caramels.

Why chocolate peppermints get all the "play" is hard to fathom. Not that I have a thing against the peppermint. Properly made, it is a delicious piece, but so are nougats, caramels, molasses kisses, and any number of other candies which lend themselves equally well to the pocket package. Put up in 15c or 20c packages, they will sell and sell readily.

Packages priced at 25c are a trifle high if you want quick turnover. The most popularly priced packages are those which sell for 15 to 20c and contain 2½ to 3 ounces of candy.

Pocket Packages Regarded as Trial Packages

Some of the candies sold in the retail stores under this description are considerably below par (assuming par to be the quality of similar goods in the standard one pound packages). This is a serious mistake on the part of the manufacturer. Actually, the pocket package is regarded as a *sample* of the product which he sells in larger packages. The smaller package should contain nothing but the *best* candies his plant is capable of turning out, for if the consumer finds this sample inferior, he will not be inclined to purchase the larger half pound, one pound or two-pound boxes of the same goods.

More attention should be given to the dress or outer appearance of these "trial" packages. Perhaps even more than the larger unit packages, the pocket package needs some little touch of individuality to take it out of the commonplace. Being in the nature of a sample of the larger goods, it presents the first impression of those goods to the customer. Make sure that it is a good one. The small package whose design is a reproduction of the larger standard package carries out this association of ideas, makes the pocket package a trial package in a very real sense, and thus serves as the first step in a definite selling plan. Similarly, the trial pocket package can be made the basis for the so-called "added sale," which is to say, that the customer who comes in to buy a large box of some particular variety is induced to take along a trial package of another variety as well.

Introducing a Little Variety

I have referred to the seeming partiality of the candy manufacturer for pocket packages of chocolate-covered peppermints. How about pulled and wrapped molasses pieces, nougats, caramels and cocoanut numbers, or an assortment consisting of a few crystallized pieces such as gum drops, jellies or crystal creams and sugar wafers of different varieties and flavors?

In the chocolate-coated goods, one might try chocolate plantations, assorted chocolates, a good jelly or cocoanut paste, a fudge, or a nut chew. Every item on this list lends itself ideally to the pocket package and the retail price can very easily be kept within the ten to twenty cent range.

One of the principal advantages of the pocket package is the fact that it is *not* seasonable. Once a good line is started and pushed, it will continue to pull in a lot of business throughout the entire year—and this is business which would otherwise be "passed up." If you convince your retailers that they can take in many additional dimes and quarters by placing these smaller packages right where they are bound to hit the eye of customers and that these are the add-sales which every merchandiser is looking for, they will be more than willing to cooperate.

The sales of chains and 5 and 10 cent

stores indicate that the big bulk of candy business is being done today between the ten and twenty cent levels. This does not mean that the consumer wants "cheap" candy. Some of the goods sold in small units for 10c and 20c a package are every bit as good as the best dollar and dollar and a quarter goods—the difference being mainly in the size of unit sold, and *not* in the quality.

Speaking of Nickel Bars and Penny Goods—

NEXT in price order come the nickel and penny goods. The last time I examined a collection of 5c bars, chosen indiscriminately from candy stands, subway stations and like dispensaries of nickel goods, I was astounded at the inferior quality of the merchandise being foisted upon the poor consumer—inedible centers, cheapest of coatings and careless workmanship. But, now—what a change! The improvement was a revelation. With few exceptions, the 5c bars I examined were of extra good material, taste and workmanship. And, too, their condition upon arrival in the consumer's hands is an improvement, due no doubt to the better quality of the bars themselves and to better packaging methods and materials.

The candy bar business is of such importance to the manufacturer today that it requires thorough, careful and intensive study. The best quality confection on the market, if improperly merchandised, has little chance of success. Neither can high-powered merchandising any longer make a "best seller" out of a piece of "junk." One large manufacturer having a line of good quality 5c bars, supplies the retailer with an attractive display stand which accommodates his entire bar line. Despite the fact that these bars are smaller than the average 5c bar, they are enjoying a substantial sale because they are properly displayed in a place on the counter within easy reach of the customer. Sales of this nature are often incidental to the purchase of other merchandise, however, I have seen customers select as many as five or six of these bars at a time. The volume of such "pick-up" business will present rather attractive figures in the course of a year and it ought not to be regarded lightly.

The Children's Choice

Children have a penchant for bar goods. Generally speaking, they would rather have a nickel bar to chew on than have a box of the finest confection on the market to select from. To their small minds the 5c bar is ultra-ultra, and while limited finances frequently force them to make two or three penny purchases, their natural desire is for the more expensive bar. This condition has led many a small retailer catering to this class of trade to seek a bar selling for two or three cents. Of course we all know that labor and other costs make a bar of this type almost out of the question, however, some enterprising manufacturer might consider its possibilities worth investigating.

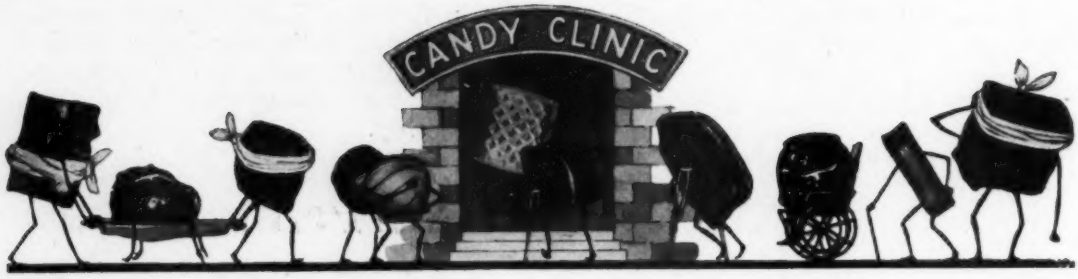
Now is the time to get busy with some real good winter numbers. We have had our chocolate-coated bars, crystal jellies and cream bars all summer. Let's work out a few uncoated numbers—a peanut brittle bar, a lemon cocoanut, molasses peanut butter, one or two hard candy bars and perhaps a molasses pulled bar. Do not try to give too much for five cents but do make them good!

Penny Goods—Good and Bad

As for the samples of penny goods I examined—some were rank and absolutely unfit for sale while others were fairly good. One or two of the hard candy pieces were particularly bad. Hard candies properly made and coated with sugar can be readily handled and will always be salable. Too bad manufacturers are not giving more consideration to this class of goods for it offers a better profit than almost any other penny item.

Surprising to me is the fact that the "kids" do not buy highly colored pieces nor do they any longer go in for the kind they get the most of. I have watched them and they are

(*Continued on page* 59.)



The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies. This month it is bars and penny pieces; next month it will be the year's outstanding packages. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

Bars and Penny Pieces

(Wherein the Staff does the well-known "honeymoon circuit"—to Niagara and return)

Code 11A 29

Chocolate Walnut Dragees—¾ Ozs., 5c

(Purchased in a retail store in New York City.)

Folding box used: Silver and blue, name in blue.
Size: 4⅛″x1″x¾″.
Milk Chocolate Walnuts: Were walnut pieces.
Milk Chocolate Coating: Fair.
Center: Walnut. Good tasting. This piece is panned and finished with a gloss.
Remarks: This is something different in nickel sellers and is a good eating piece.

Code 11B 29

Peanut Bar—1½ Ozs., 5c

(Purchased in a railroad depot in New York City.)

White Cellophane wrapper used, gold seal, name in blue.
Size: 5″x1¾″x⅜″.
Peanuts: Splits used.
Flavor: Good.
Remarks: A good eating peanut bar, neatly put up.

Code 11C$_1$ 29

Filbert Fudge Bar—2 Ozs., 5c

(Purchased in a drug store in Albany, N. Y.)

Wrapper: White Cellophane. Blue seal, name in red and white.
Size: 3¼″x1⅜″x⅝″.
Fudge:
Color: Good.
Texture: Good.
Flavor: Good.
Filberts: Whole nuts used, partly roasted, unblanched.
Remarks: This is a good fudge for the price.

Code 11C$_2$ 29

Walnut Fudge Bar—2¼ Ozs., 5c

(Purchased in a drug store in Albany, N. Y.)

Wrapper: White Cellophane. Blue and red seal used, printing in black and white.
Size: 3¾″x1¼″x⅝″.
Fudge: White layer on top.
Color: Good.
Texture: Good.
Flavor: Good.
Walnuts: Good.
Remarks: Size and quantity good for the price.

Code 11D 29

Chocolate Covered Cocoanut Cream Bar—2 Ozs., 5c

(Purchased in a retail store in New York City.)

Glassine Wrapper, printed in green and yellow.
Size: 4¼″x1″x1″.
This piece is made up of chocolate cocoanut paste center dipped in a thin coating of milk chocolate.
Coating:
Color: Good.
Flavor: Fair.
Center:
Texture: Good.
Flavor: Good.
Remarks: This is a large bar for five cents and a good cocoanut bar.

Code 11E 29

Assorted Penny Pieces

(Purchased in Albany, N. Y.)

Chocolate Covered Peanut Butter: Fair.
Coating: Taste poor.
Center: Contained a small amount of peanut butter.
Taste: Slightly off-taste.
Remarks: Peanut butter numbers are not good for summer business because they rarely keep in good condition.

Code 11F 29

Licorice Gum Sticks—5 Inches Long

This piece is sugared.
Flavor: Good.
Texture: Good.
Remarks: A good penny piece and deservedly popular.

Code 11G 29

Chocolate Marshmallow Bar—2½ by ¾ Inches

Chocolate: Bad tasting.
Center: Cheapest kind of moonshine.
Flavor: Bad.
Remarks: This is not fit to be sold.

Code 11H 29

Chocolate Maple Cream—1c

(Purchased in Albany, N. Y.)

Chocolate Coating: Rank.

Center: Fondant fair, flavor bad.
Remarks: This kind of candy does an immeasurable amount of harm to the candy business.

Code 11I 29

Banana Taffy Chew—1c (No Weight Shown)

(Purchased in Albany, N. Y.)
Brown wax wrapper, name in red.
Size of piece: ½"x1"x¾".
This is made like a chewey taffy and flavored banana.
Texture: Good.
Flavor: Fair.
Remarks: This would make a better eating piece it some other flavor were used.

Code 11J 29

Chocolate Coated Cocoanut Macaroon—1¼ Ozs., 5c

(Purchased in Albany, N. Y.)
Wrapper: White Cellophane.
Chocolate Coating: Milk: Very cheap tasting.
Center: Good; a cocoanut macaroon.
Remarks: The center is a good eating piece of candy, but the coating is bad tasting. Suggest that a better coating be used.

Code 11K 29

Molasses Sponge and Peanut Butter Bar—2¼ Ozs., 5c

(Purchased in a retail store in Gananoque, Ont.)
Wrapper: Glassine, name printed in yellow and green on black background.
This bar is made up of molasses sponge and peanut butter. The peanut butter was rancid, consequently the bar was not edible.
Remarks: This bar does not make a very good summer bar. Peanut butter is apt to become rancid in a very short time during the warmer months. We suggest that this bar be made during the cool months only.

Code 11L 29

Chocolate Covered Almond Nougat Bar—1½ Oz., 5c

(Purchased on Clayton Ferry, Clayton, N. Y.)
Wrapper: Glassine, name in black on orange background.
Size: 3¾"x1"x½".
Chocolate Coating: Sweet.
Taste: Fair.
Center: Pink Nougat with almonds.
Texture: Good.
Taste: No flavor could be tasted other than that of the almonds.
Remarks: Suggest that sufficient flavor be used in this center so that it can be tasted.

Code 11L₂ 29

Chocolate Coated Fudge Bar—1¾ Ozs., 5c

(Purchased on Clayton Ferry, Clayton, N. Y.)
Wrapper: White glassine; name in blue on orange background.
Size: 2"x1½"x¾".
Chocolate Coating: Sweet.
Taste: Good.
Center:
Texture: Good.
Flavor: Good.
Remarks: Suggest that this bar be made larger and thinner. As it is, it looks too small.

Code 11M 29

Chocolate Coated Caramel Nougat Bar—1¾ Ozs., 5c

(Purchased on Clayton Ferry, Clayton, N. Y.)
Wrapper: White glassine, printed in red and green.
Size: 2½"x1½"x1⅛".
Chocolate Coating: Milk.
Taste: Good.
Center: Caramel and light chocolate nougat.
Taste: Good.
Texture: Good.
Remarks: This is a good 5c bar and is enjoying a good sale.

Code 11N, 29

Ginger Fruit Bar (No Weight Shown)

(Purchased in Niagara Falls, Canada.)
Wrapper: Paper, red and white. Name in blue.
Size: 4"x1¼"x⅜". Foil wrapper under white.
Chocolate Coating: Milk.
Taste: Fair.
Ginger: Cut in very small pieces.

Who's Who in Bar-dom and Pennyland?

—not who's who in the social register sense,—but can you make out which of these bars and penny pieces is yours and which is the other fellows?

How Do Your Nickel Bars And Your Penny Pieces Shape Up?

—an occasional glance around you at what the other fellow is doing will broaden your perspective and help you to originate new ideas of your own.

—The Candy Clinic simplifies the task by searching the highways and byways of the candy mart for you. Alertness is the price of progress.

Taste: Good.
Remarks: This is a moulded milk chocolate bar with small pieces of ginger mixed through. This ought to be a good 5c seller.

Code 11N, 29

Chocolate Fudge Bar—5c (No Weight Shown)

(Purchased in a retail store in Gananoque, Ontario, Canada.)
Wrapper: Glassine.
Size: 2½"x2½"x½".
Chocolate Coating: Fair.
Center:
Texture: Good.
Taste: Tastes as though scrap had been used.
Remarks: The center of this bar needs looking into; it doesn't seem as though any chocolate could have been used in it.

Code 11O 29

Sucker Sticks—½ Oz, 1c (Neither Name Nor Weight Appeared on Wrapper)

(Purchased in a restaurant, Boonville, N. Y.)
Wrapper: White wax paper.
Size: 4"x⅜".
This is a hard candy stick; the flavors were good, but the sticks partly grained.
Remarks: The law requires that the name and address of the manufacturer be printed on the wrapper; also the net weight of the candy.

Code 11P 29

Wild Cherry Stick—½ Ozs., 1c

(Purchased in a restaurant, Boonville, N. Y.)
Wrapper: White wax.
This is a hard candy piece, 2½"x⅜", made with a roller. Flavor was good but the piece was entirely grained.
Remarks: Suggest this piece be sold only during the cool months.

Code 11Q 29

Hard Candy Lollypop—1 Oz., 2 Pieces for 5c

(Purchased in Niagara Falls, Canada.)
Wrapper: Glassine, printed brown; name in white. White wax wrapper also used.
This is a chocolate hard candy. Pop on stick, 2½"x1¼"x⅜".
Flavor: Good.
Hard candy in good condition.
Remarks: This is a good pop for the price.

Code 11R 29

Chocolate Chewey Caramel—1c (No Weight Found on Wrap)

(Purchased in a retail store, Albany, N. Y.)
Wrapper: White wax, with brown paper band, name in gold.

THE CANDY CLINIC
80-86 COURTLANDT STREET
NEW YORK CITY

℞

Don't try to give a whole lot for the money. Compute costs carefully, produce good edible pieces and figure the size accordingly.

SUPERINTENDENT

This piece is well known and is a good one cent seller. Piece was in good condition and had a good chew.

Code 11S 29

Chocolate Coated Nougat Bar—1½ Ozs., 5c

(Purchased in Niagara Falls, Ont.)
Wrapper: Red foil; name in red on gold base.
Size: 2⅝"x1"x¾".
Chocolate Coating: Good for this price class.
Center of Nougat:
Texture: Good.
Flavor: Good.
Remarks: This is a good 5c nougat bar. Suggest that the bar be made larger and thinner as it looks very small.

Code 11T 29

Chocolate Fudge Bar—2 Ozs., 5c

(Purchased in Niagara Falls, Ont.)
Wrapper: Red foil.
Texture: Good.
Taste: Fair.
Color: Too light for chocolate.
Remarks: This bar did not have a good chocolate flavor, which can be afforded even at this price.

Code 11U 29

Chocolate Coated Marshmallow Nut Bar—2 Ozs., 5c

(Purchased in a retail store, Brooklyn, N. Y.)
Glassine wrapper used: Printed in red and yellow.
Size: 4"x1½"x¾".
Milk Chocolate Coating used.
Color: Good.
Taste: Good.
Center:
Marshmallow: Good.
Topped with peanuts and dipped in milk chocolate.
Remarks: This is a large selling bar and makes very good eating.

Code 11V 29

Milk Chocolate Bar—1⅜ Ozs., 5c

(Purchased in a retail store in New York City.)
White glassine bag used; name in blue.
Size: 4"x2"x¼".
This is a chocolate cake, marked in squares.
Flavor: Good.
Color: Good.
Remarks: A good eating milk chocolate for the price.

Code 11W 29

Chocolate Truffle Bar—5c (No Weight Shown)

(Purchased in a retail store, Gananoque, Ontario, Canada.)
Wrapper: Silver foil, printed in blue; name in red.
Size: 3¼"x1"x½".
Chocolate Coating: Fair. Over-rich, so as to be somewhat greasy in character.
Center: Chocolate truffle.

Texture: Good.
Taste: Good.

Remarks: An excellent eating bar, but the coating is entirely too greasy tasting.

Code 11X, 29

Chocolate Date Bar—5c (No Weight Shown)

(Purchased on Toronto Boat.)

Wrapper: White glassine. Palm scene printed in yellow; name in blue. Tin foil under wrapper.
Chocolate Coating: Milk.
Taste: Good.
Center:
Dates: Very good tasting.

Remarks: This is a moulded milk chocolate bar, with pitted dates mixed through. A good eating bar and it ought to make a good seller.

Code 11X, 29

Chocolate Coated Fudge Nut Bar —5c

(Purchased on Toronto Boat.)
Size: 3¼"x1¼"x¾".
Wrapper: Glassine, printed in yellow and white; name in red and blue.
Chocolate Coating:
Milk: Fair.
Center: Maple fudge with peanuts.
Taste: Good.
Texture: Good.
Remarks: This is a good eating bar.

(Following are a few of the leading one cent sellers picked up in New York City.)

Code 11Y 29

Wrapped Caramels: 4 for 1c. Wrapped.
Flavor: Vanilla and chocolate. Fair.
Texture: Good.

Code 11Z 29

Sugared Gum Drops: 4 for 1c.
Color: Green. Good.
Flavor: Good.
Texture: Good.

Code 11a 29

Raspberry Drops: Hard candy. 4 for 1c.
Color: Good.
Flavor: Good.

Code 11b 29

Chocolate Fudge: 1¼"x1¼"x⅜".
Chocolate Flavor: Fair.
Color: Good.
Texture: Good.

Code 11c 29

Wedding Bells: Hard Candy Chip, 3"x1¼"x1/16", filled with peanut butter.
Wrapped in wax paper. A good eating piece for 1c.

Code 11d 29

Marshmallow Banana:
Color: Pink.
Texture: Entirely too hard.
Flavor: Fair.

Answers to October Questions

(*Continued from page* 45.)

produce vitamine D, the sunlight vitamine?

Ans. Milk contains ergosterol which to date is the only substance known to be activatable by ultra-violet light.

8. *Is it practicable to impregnate candies with high vitamine-bearing materials without affecting their taste and general character?*

Ans. Yes. Such substances are commercially available for this purpose at the present time.

9. *Why was stone preferred to steel slabs for making fondant in the old days?*

Ans. Because stone being porous permitted tiny particles of crystalline sugar to lodge in its pores, which assisted in "seeding" the subsequent batch.

10. *Which of the three sugars—sucrose, dextrose or levulose—possesses the greatest resistance to fermentation?*

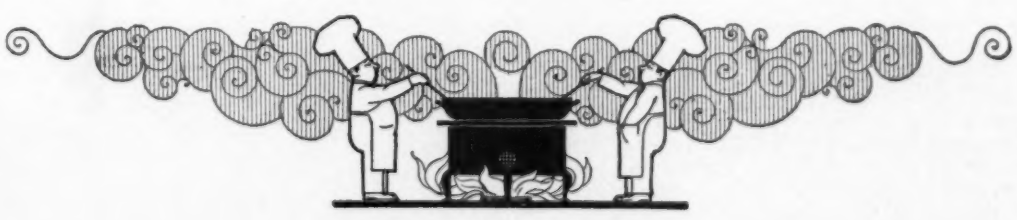
Ans. Dextrose.

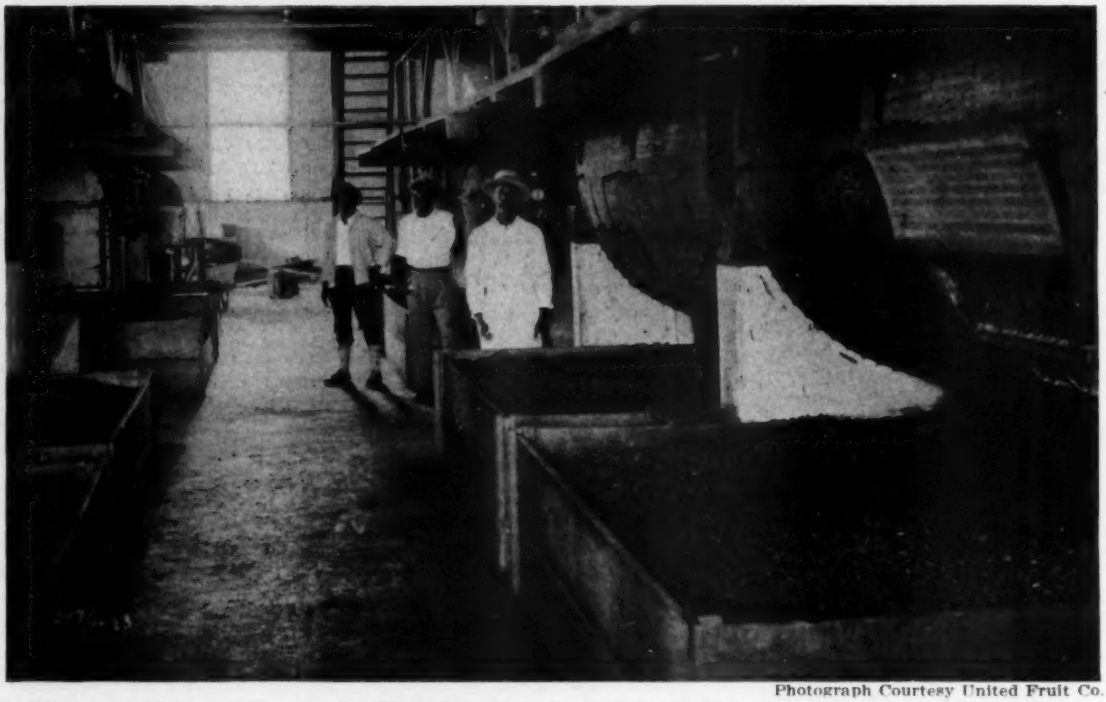
Speaking of Nickel Bars and Penny Goods

(*Continued from page* 55.)

very careful buyers. They select such things as uncoated caramels, lemon and cherry drops, fudges, licorice sticks, jelly pieces, orange slices, etc.

Of course we all know there are limits to what we can do with the raw materials we have to use in our penny goods. My advice to the manufacturer of this class of merchandise is not to try and give a "whole lot" for the money, but to compute his costs more carefully, produce good edible pieces and figure the sizes accordingly.





Photograph Courtesy United Fruit Co.

Artificial bean drying compensates for Nature's vagaries in this thoroughly modern drying room operated by an American concern in Central America

Preservation *of the* Aromas *in the* Roasting of Cacao

XI "Chats on Chocolate"

By Robert Whymper

(Author of "Cocoa and Chocolate" and International Chocolate Authority; writing exclusively in The Manufacturing Confectioner)

SINCE roasting was originally practiced to develop well-known chocolate flavor of cacao beans, the science of aroma formation in the bean is probably the most important knowledge that a cocoa and chocolate manufacturer should possess. At the outset it must be admitted that neither chemists nor technical men know much about the subject, the former having had little opportunity to study the matter owing to apathy on the part of cacao users and to the poor pay offered to research workers in the industry; the latter roasting by rule of thumb until the best aroma is considered by them to have resulted from the beans in their possession. In other words, in order to overcome the difficulties arising from normally occurring variables, the personal factor is still predominant in the roasting process.

In recent years roasting is usually only partial, and the beans are little more than dried out so that the shells can easily be winnowed from the kernels after crushing. In this way the ground nibs or bitter chocolate goes to the mixing machine or melangeur in a comparatively green state, and the full development of aroma is allowed to take place in subsequent processes involving the application of heat at different temperatures over different periods of time. Provided these later processes are not rushed and that intelligent control is exercised by a thoroughly trained superintendent with a first-class palate, the partial roast followed by gradual development of aroma is the better practice.

Easier to Gauge Flavor in Finished Product

The writer has been called impractical for roasting one type of beans very quickly one day and another type very slowly on the next, and he has been dubbed "absurd" for insisting upon the continuous application of a moderate and constant low heat to a chocolate made from a partial roast, and upon keeping it in perpetual agitation over a period

Photograph Courtesy United Fruit Co.

The uncertainties of sun drying are clearly indicated in this picture. The platforms are mounted on trucks run on rails. The platforms are hastily pushed under cover at the first sign of rain

of several days and nights. Admittedly the personal factor has again to be considered in both these cases, but in the latter the end point of the gradual development of the full flavor of a chocolate is easier to gauge than the speedy development of the full aroma in the beans themselves. In other words, one is passing judgment on the flavor of the finished product (though the difference between flavors of liquid and solid chocolate must be understood) and not upon only one of the ingredients.

So far as the former point is concerned, namely, how any type of bean should be roasted, it is necessary to go back to one of my earlier articles where the development of aroma during fermentation of cacao beans was discussed briefly with a promise that the subject would be treated subsequently in greater detail.

In fresh cacao beans there is no semblance of a chocolate or cocoa flavor. After twenty-four hours' fermentation the aroma is "aromatic" rather than distinctively of chocolate, but gradually, with each day's further fermentation up to six days, with the conditions which we were working, a chocolate aroma becomes more pronounced. Even then, in the beans *themselves*, it would be a clever man who could say that the aroma was distinctively of chocolate and *it is not until the beans are dried by heat or boiled in water* that a real chocolate aroma is clearly noticed. For this reason the writer has been inclined to distinguish between the natural aroma of cacao as found in fermented beans (Aroma 1) and that developed by any drying or heat treatment (Aroma 2). It is clear, first, that Aroma 1 differs profoundly in every different type of cacao grown and upon soil and climatic conditions in which the cacao was raised —this is a common observation for every kind of aromatic fruit, leaves, bark, etc.—and upon the subsequent processes of fermentation and drying. Second, Aroma 2 depends primarily upon the chemical composition of Aroma 1 and can be ruined or enhanced in development according to the treatments of drying and roasting given, of which temperature and speed are the two most important factors.

Heat Treatments After Roasting Link Latent Aromas of Cacao

The following question, among others, was raised by the writer who made experiments to answer it—"What relationship exists between Aroma 1 and Aroma 2 that by any manipulation could be induced to work towards obtaining the best possible result in the finished product?" Without going into the matters of ripeness and type of cacao, soil, speed of ripening, and processes and speed of fermentation, it becomes obvious that the physical link between the two in the normal preparation of cacao on the one hand and of cocoa products on the other, lies in the heat treatment—or in the drying which is a mild form of roasting.

Working on these premises it was found that a pronounced chocolate aroma could be developed in cacao by drying direct wet fermented

The essential oil of cacao has been shown to consist of about equal parts of aromatic esters and of a linalool, supposedly similar to coriandrol, both capable of distillation; hence the process of heat application both in drying and roasting are of paramount importance

beans at a high temperature and that the resulting dry cacao would pass muster as a poor cacao the aroma of which could not be increased or improved by any further amount of roasting. Slow drying of cacao, in which the temperature started low and gradually increased to the same temperature as that used in the first experiment, was a great improvement on rapid high temperature drying so far as the finished aroma was concerned, but again it was found that further roasting did nothing to improve that aroma. In both these casese the shells of the beans were far too friable to allow transport, and, apart from the fact that not only was there no advantage in these methods of treatment over the ordinary, but an actual inferiority of flavor, it was shown that there was a proper speed and a proper temperature of drying which, when the beans were subsequently roasted, enabled the best and the most flavor to be developed.

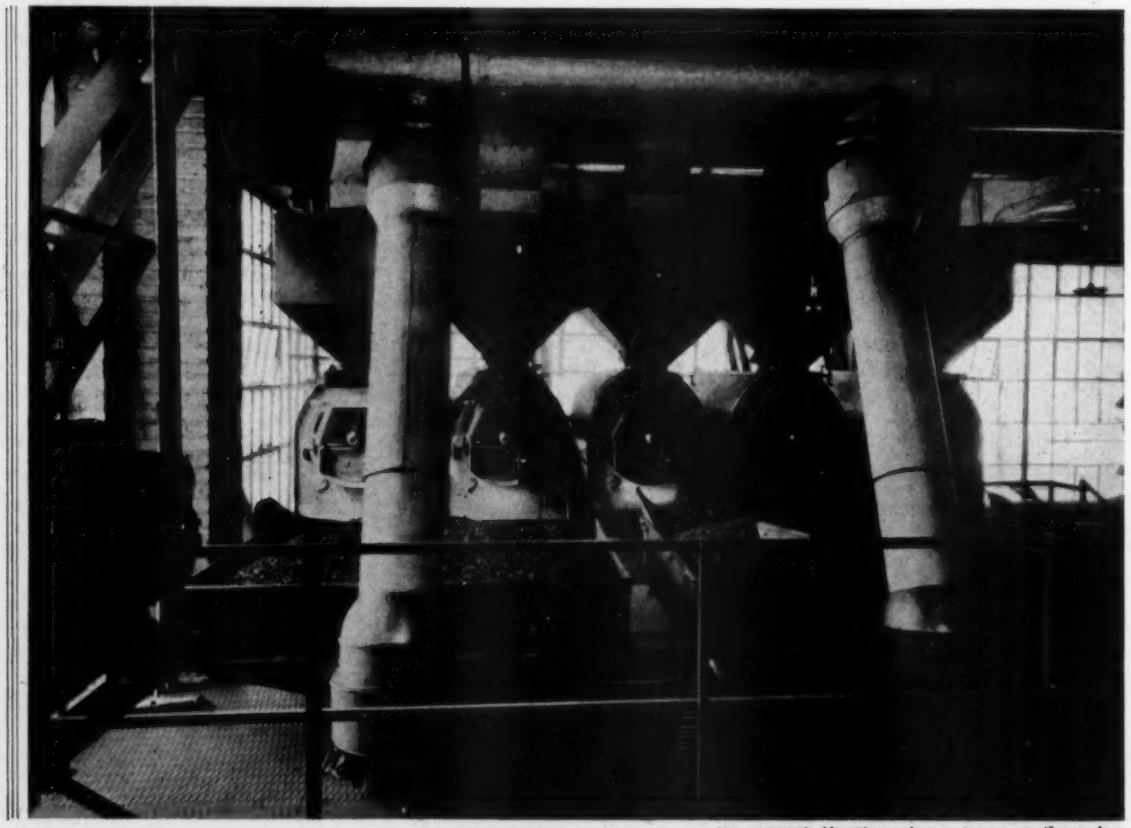
Structure of Oil of Cacao

These experiments, while at first sight appearing to be of academic interest only, enable one to fix in the mind some idea of how the essential chocolate flavor can be suitably developed to its maximum extent. Much argument has taken place as to how the action of heat brings out the chocolate aroma with which roasters are familiar, but, while this is still open to argument, one thing is certain, namely, that since the essential oil of cacao has been shown to consist of about equal parts of aromatic esters and of a linalool, supposedly similar to coriandrol, both capable of distillation, the method and process of heat application both in drying and roasting are of paramount importance.

Nowhere in available literature is there to be found as intelligent and comprehensive a discussion of the development of flavor in cacao and chocolate as in this series by Mr. Whymper.—The Editor.

Moreover, we can visualize the action of slow drying (by sun or artificial heat) on the kernels of cacao which are allowed to warm up evenly and slowly throughout the process, and we can see the effect of rapidly applied heat to a body such as a cacao bean which has appreciable dimensions of length, breadth and thickness. In the latter case local overheating must occur. Hence, for all scientific reasons, moderately slow drying, only partial roasting, and a subsequent development of flavor by heat in a homogeneous mass of chocolate, kept in constant agitation, must give the best results. And in practice they do.

One word more on this subject. If Aroma 2 is allowed to develop during drying by high temperatures, and the beans are subsequently kept in sacks for transport and storage for many months before roasting, it stands to reason that that developed aroma does not improve, the cacao being in contact possibly with some mouldy beans and in any case with



Photograph Courtesy Jabez Burns & Sons, Inc.

A battery of the latest type cocoa coasters—from an installation in the New York City chocolate factory of Runkel Bros.

If aroma No. 2 is allowed to develop during drying by high temperatures, and the beans are subsequently kept in sacks for transport and storage for many months before roasting, the developed aroma does not improve, being in contact possibly with some mouldy beans and in any case with bodies that cannot improve the flavor

bodies that cannot improve the flavor. The high temperature employed breaks the fat cells, among others, and allows some fat to be soaked up by the shells; and it must not be forgotten that fat is a marvelous odor absorber. This point has been raised here to bring out another made in a previous article by me, that it is a good thing to roast beans as soon as possible after arrival in the factory, to nib and husk them and to grind the nibs to cocoa liquor, which is subsequently cooled in large blocks and stored. The roasting may be partial or full, and there is no chance in either case of the set liquor deteriorating. On the contrary, blocked bitter chocolate improves by keeping within certain limits of time, provided it is stored sensibly in a cool place and away from all contaminating odors. The difference in the result between this method of storing blocks of bitter chocolate and that of keeping beans dried at too high a temperature in sacks is obvious.

(To be continued)

Lecithin (*Continued from page* 53.)

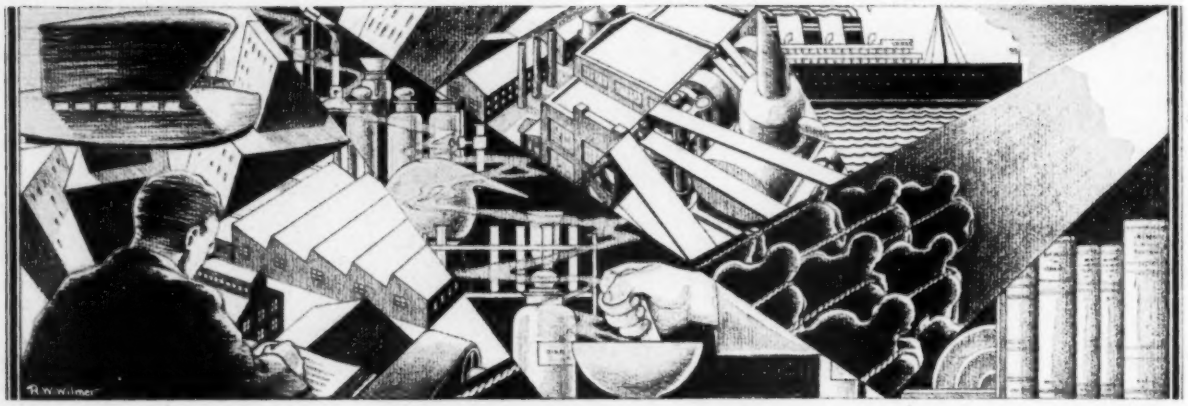
cocoa butter into its elemental fats and make a homogeneous product of them instead.

That this is a step in the right direction towards solving the bloom problem is shown by another test made on chocolate. The second photograph shows some chocolate covered candies which have been subjected to the same heat treatment. They were covered with the same coating except that in one case 0.25 per cent lecithin was added to the coating. The superior resistance of the lecithin bearing chocolate is evident from the photographs.

Attempts to duplicate these results by other operators have not been entirely successful, and there are obviously some factors in the incorporation of lecithin in chocolate which are not yet well understood. Some tests conducted under apparently duplicate conditions have shown negative results in so far as protection against bloom is concerned, and very careful study is necessary in order to determine the cause of the inconsistent results. However, the fact that actual protective results have been obtained indicates the ultimate success of lecithin when research finally determines the cause of the failures.

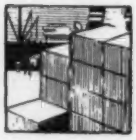
Lowered Viscosity Seen as Cocoa Butter Economy

When lecithin is added to chocolate, a marked change in viscosity has been noted by several investigators. There is an increase in fluidity which permits of the reduction in amount of added cocoa butter in order to obtain a smooth working coating. It is the opinion of two food chemists of my acquaintance who have worked with lecithin, that its use will effect economies in manufacture entirely aside from its possibilities as a bloom deterrent. The average confectioner has seen so many "solutions" of the bloom problem collapse, that he has become blasé and there is an increasing tendency to condemn a new product on the result of one unfavorable trial. There have been enough successful tests of lecithin by chemists working independently in different localities, that there is every incentive to give this new possibility a thorough investigation in the hope that the secret of its successful application will soon be discovered.



Monthly Digest of
CURRENT TECHNICAL LITERATURE

Processing Italian Cherries in America



S. Blumenthal and L. Thuor. Food Industries, vol. 1, p. 554 (1929). The manufacture of Maraschino - type cherries has grown by leaps and bounds during the past 30 years, and today it holds a moderately important position in the food industries, judged by the value of its finished products. Only in rare instances are the Maraschino cherries made in this country flavored with the genuine distilled flavor produced from Marasca cherries grown in Dalmatia. The words "Maraschino-type," therefore, designate an imitation of the original product.

The total quantity of sulphured and brined cherries produced in Italy in 1928 was somewhat larger than in 1927, being approximately 48,500 bbls. (220 lbs. to a bbl.). Of this quantity, 37,000 bbls. were prepared by the sulphuring and brining industry to meet the requirements of Italian foreign markets. The largest consumer of sulphured and brined cherries is the United States, which takes about 90% of the total Italian export.

The methods of sulphuring, brining, steaming and pitting cherries do not differ essentially in Italy from those employed in the United States. The object of sulphuring is to arrest decay temporarily, to bleach the cherries to a uniform pale amber color, and at the same time to give firmness to the tissues. The fresh fruit, which is placed in half-filled baskets (about 25 lbs. to each basket), is exposed to the fumes of burning sulphur in a closed room for about 12 hours. For a room well filled with baskets of fruit, the proportion of sulphur employed is about 2½ lbs. to 250 lbs. of fresh cherries. Sulphur dioxide, as a dry gas, is inert with regard to ability to preserve fruit. It is only when dissolved in water that its properties become valuable. A little water is, therefore, sprinkled on the fruit so that sulphurous acid is formed, which preserves the fruit. Since sulphurous acid can be removed by washing, this is a cheap and relatively innocuous method of preserving fruit.

Subsequently the cherries are packed in casks and covered with water containing dissolved sulphur dioxide (sulphur fumes), which not only is capable of preserving them for a period of two to three years without decomposition, but also protects them from injury in transportation. A little salt is added to the contents of each barrel intended for export to the United States, not, it is stated, because this enhances the preserving quality of the liquid, but to meet the requirements of the declaration, "in brine." Cherries in brine formerly were exported to the United States without being stemmed and pitted, but this is no longer done. Most, if not all, cherries are now stemmed and pitted by the Italian producers before shipment. Only about 65% of sulphured, brined and pitted cherries can be marketed as "whole," while the remainder must be sold as spotted or broken fruit.

The quality and size of the cherries are taken into consideration by the American buyers, and the following features are desirable. The cherries should be of the free-stone variety, graded fairly evenly; they should be meaty and not of the very small type with large pit centers, and the shape should be round, without blemishes or spots. The cherries are bought by size and are graded according to four standard sizes, viz.: dipping (ranging from 10 to 14 millimeters in diameter), small (14-18 millimeters in diameter), medium (18-22 millimeters in diameter), large (22-26 millimeters in diameter). When the cherries are received at the Maraschino packing and processing plants they are run through a sorting machine which grades the fruit for size. They are then washed free from brine and sulphur dioxide or sulphurous acid.

Many washings of the cherries during a period of several days will reduce the sulphur dioxide to a point below the legal limit. This treatment has a tendency to break the skins and make the product slightly lacking in uniformity. However, for shipments to states that do not tolerate sulphur dioxide, there is available a chemical treatment which is effective and simple and shortens the process to about 8 hours, the sulphur dioxide content

being reduced to about 25 parts per million.

Ponceau 3R is the certified color which is usually employed to color the cherries red, 1.5 to 2 ozs. of color being dissolved in a bucket of warm water and added to a barrel of cherries. The barrel is rolled daily to insure uniform color. At the end of a week of repeated rollings the cherries have taken up all the color they can absorb. When the manufacturer does not place much stress on the appearance of his goods, and when time is a factor, he can save time by warming the cherries and color together in a copper or glass-lined kettle. There are also cherries on the market flavored with mint and colored with Light Green SF Yellowish or Guinea Green B. In the same fashion, other flavors and colors can be produced.

The cherries are now ready for the sugar syrup. When a cold process is used, by adding a 36° Baumé syrup to the barrel, rolling a few times, and then allowing the barrel to stand about 7 days in a cool place, the Baumé reading will be reduced to about 20°. This syrup is drawn off and reinforced to its original strength by addition of sugar. This, in turn, is allowed to stand until the Baumé is reduced to about 22°. Some packers of Maraschino-type cherries use 36° Baumé syrup already prepared for them by refiners of raw cane sugar. This syrup gives the same results and is cheaper than granulated sugar. Another method of introducing syrup is by adding hot syrup to the cherries and, as the Baumé test of the syrup on the cherries falls, reinforcing with hot syrup of higher Baumé test. Finished barreled goods test about 22° Baumé, and bottled goods, only about 14° Baumé, since the latter are pasteurized and the former are not. Inferior grades of sodium benzoate, used as a preservative, sometimes impart a peculiar odor and taste to the cherries. This is especially true when a hot process of preserving the cherries is used, as the impurities of sodium benzoate are somewhat volatile with heat and may impart a decidedly phenolic taste to the cherries. Benzoate of soda is not usually added to bottled goods because such goods are pasteurized. Bulk cherries are sold in 10 different sizes, according to count. The smaller sizes are used for dipping purposes, and the larger sizes, for decorations and salads.

Glacé cherries are made by thoroughly washing out sulphur dioxide from cherries in brine (requiring 4 to 7 days), parboiling about 20 minutes, cooling quickly in running cold water, draining, and covering with a light syrup to which color has been added. After standing overnight, the cherries are brought to a boil in a copper kettle, and held about 3 minutes. They are then transferred to crocks or pails, allowed to stand overnight, and then returned to the kettle, and the syrup reinforced with more sugar. This procedure is repeated until the cherries are impregnated with the desired amount of sugar and corn syrup.

Some concerns adhere to the practice of adding only hot syrup to the cold cherries. The cherries are drained each time, and the syrup is heated with the addition of more sugar. This method is slow, but it results in a better tasting product of a more desirable color. When the cherries have been thoroughly sugar-cured, they appear almost transparent to light. They are then transferred to a large kettle in their own sugar syrup, and brought to a boil. They are held here about 20 minutes, and are then spread on draining boards and allowed to drain and dry for 24 to 36 hours. The cherries must not be too sticky to the touch and, when properly made, should not become sugary over a period of 3 to 4 months.

Molding Chocolate, Etc.

British Patent No. 303,154 to C. G. Ebeli, Haarlem, Holland. In Food Manufacture, vol. 4, p. 120 (1929). This patent relates to endless-chain machines for feeding chocolate or other thick fluid into molds under pressure by means of a piston cooperating with an apertured plate, and comprises a piston consisting of two perforated parts having a lost motion connection, one part carrying obturating members for the apertures in the other part.

Nuts as a Possible Source of Bacillus Coli Found in Candy

John Weinzirl (University of Washington). Paper read at the 30th annual convention of the Society of American Bacteriologists at Richmond, Va. (from Food Industries, vol. 1, p. 236). Nuts are not the source of *B. coli* found occasionally in candies. The colon bacillus is a normal inhabitant of the intestines of warm-blooded animals, and when found elsewhere is commonly accepted as evidence of unsanitary conditions. However, Weinzirl showed that 600 samples of nuts carried the bacillus with less frequency than it is usually found on candy. This is interpreted to show that, as in the case of candy, the contamination is probably by the hands of the vendors rather than from manufacturing operations.

Confectionery

British Patent No. 308,469 to O. Kremmling, Hamersleben, Germany. In Food Manufacture, vol. 4, p. 242 (1929). This patent covers equipment for coating bakers' and confectioners' goods, using rotary brushes. In a brushing machine for coating, glazing, brushing, and otherwise treating products such as confectionery, a rotary or band brush is used which is reciprocated transversely to the direction of the feed movement of the confections, or, alternatively, the conveyor may be reciprocated or moved bodily in a circular or elliptical path, these movements being superimposed on the general feeding movement.

Confectionery Giving a Sensation of Coolness on Eating

British Patent No. 311,168 to Magat et Cie. and O. Austerwell, 6 Rue Geoffroy L'Angevin, Paris and E. Platt, La Maison des Pommiers, Sark, Channel Islands, Sept. 13, 1928; in The Illustrated Official Journal (Patents), July 3, 1929, p. 3149. Confectionery giving the sensation of cold in the course of

eating is made by preparing a molten mixture of readily digestible fats, which is solidified before consumption, the fats being so selected that the solidified mixture has a low melting point and a high latent heat of fusion. Examples of suitable fat mixtures are: 1 part of cocoa butter with 5 parts of cocoanut oil or palm kernel oil, 1 part of refined Illipé butter fat and 5 parts of palm kernel oil, 2-5 per cent of cocoa butter or Illipé butter fat in a mixture of equal parts of cocoanut and palm kernel oils. Finely ground sugar or other confection ingredients are incorporated with the fats, and the mass is cooled to solidify. Defatted and roasted cocoa powder may be included in the mixture.

A New Certified Food Dye

The U. S. Food, Drug and Insecticide Administration has announced to all certifiers that an additional food dye has been approved for inclusion in the list of colors that will be certified by the U. S. Department of Agriculture. This color, which will be known as "Brilliant Blue FCF," and which has been known chemically for many years, has been tested both chemically and physiologically, and found pure and harmless to health.

Brilliant Blue FCF is a dark, purple, bronzy powder which dissolves easily in water to form a greenish-blue solution. The methods of examination and the specifications for this dye are indicated in a table issued by the Administration.

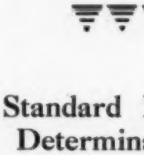
Confectionery; Chocolate

British Patent No. 309,601 to E. Oppenheim, Brünn, Czecho-Slovakia. For making chocolate or other confectionery rich in vitamines, the finished, but still plastic, mass is allowed to cool to a considerable extent, and is then exposed to the action of ultra-violet rays while being stirred, or spread in a thin layer, or subdivided as by spraying.

Grape Fruit Oil

The Perfumery and Essential Oil Record, vol. 20, p. 165 (1929). Some demand has developed for this essential oil, which appears not to be generally known. The genuine oil is derived from the fruit of *Citrus decumana*, known as "pomelo" and as "shaddock," and oils have been described from the peel, produced by expression from Florida fruits, and by steam distillation. The genuine oil is not plentiful, and that ordinarily used is factitious—very like the citron or cedrat oil which is usually a mixture of orange, lemon and petitgrain oils of various grades. This may be done by touching up a mixture of equal parts orange, lemon and petitgrain oils with a little fine citral or good lemon oil. The oil is used in the blending of ethers and essences for the confectionery and baking industries.

Standard Method for the Determination of Weighting on Silk



A standard method for the determination of weighting on silk has been worked out with the co-operation of a number of commercial laboratories and has been approved by the Joint Technical Committee on Silk Weighting.

By "weighting" is meant not only metallic weighting, but all materials other than fibroin present in the finished silk after it has been dried to constant weight in air at 110° C. The amount of weighting is expressed in per cent of the weight of the finished silk after it has been dried, as above.

The committee offers suggestions for sampling the silk, and outlines various tests for the determination of the presence of silicate, tin phosphate, logwood black, lead, zinc or aluminum salts.

Chocolate Dropping Paper

British Patent No. 297,255 to J. H. Aylott and C. Barker, London. In Food Manufacture, vol. 3, p. 556 (1928). Compound paper; parchment paper. Paper suitable for use as a chocolate dropping paper is formed with a facing of glazed or unglazed grease-proof or parchment paper and a backing of paper or equivalent material, the two layers being secured by adhesive and embossed. Brown paper or other stout paper may be used, and one or both layers may be coated with adhesive, and the two layers pressed together by rollers, which may be heated.

Sanitation in Confectionery Manufacture

By Stroud Jordan. In Food Industries, vol. 1, p. 610 (1929). Molding starch is easily contaminated with materials which are injurious, and, therefore, the room in which boards are stored must be free from dust and dirt. Infection may result when starch is allowed to remain very damp for even comparatively short periods. Care in handling and a temperature sufficient to sterilize, or a sufficient lowering of the moisture content to kill bacteria and mold spores must take place. Many cases of fermenting and bursting cream centers have been traced to this source. Proper sieving, drying and handling will eliminate this trouble.

The casting life of starch is directly dependent on the treatment it has received. It may last a year or more, but if it is allowed to remain in an excessively damp condition for long periods, or if tags from previous castings are not removed by proper screening, it will soon become unfit for further use. A handful of infected starch will ruin an entire new batch. The increase in reducing sugars must be watched. In wet starch, which contains more than 5% of total sugars, fermentation may get a foothold. Moisture in excess of 12.5% will furnish molds with a fertile field for propagation. Keep down moisture and watch sugar content if you would avoid infection and retain proper drying power. A satisfactory starch may show from 4.5 to 6.5% moisture, according to the

special drying use for which it is intended, but it should not be required that it absorb more than 2% of moisture, based on total starch weight.

Sterilization of starch boards and those used for receiving dry centers constitute another vital problem. High humidity in a room, whether from excessive steam or outside conditions, will cause softening of the outside of such centers and a sticking to the boards. Periodic sterilization must take place. For this purpose, a dishwashing machine of the power type will be found satisfactory. Boards must be sterile and dry to handle starch, for dirty boards may carry infection into the starch itself.

Fumigation and preventive spraying is not different from the methods used in other food factories. Removal of trash in closed containers, as fast as it is gathered up, and the prevention of waste accumulation which may ferment will go far toward eliminating most fermentation troubles. A weekly scouring of all flours with a hot solution of soap and sodium carbonate will remove dirt and spots. Drains should be located at such points that the boiling solution may be poured on the floors, scoured around and then swept into these drains.

Cold storage space must be watched carefully. Brine lines are necessary, and attendant frosting cannot be entirely eliminated. Defrosting must take place periodically, generally over the week-end. To take care of the water which runs off, a gutter system is sometimes used, and is placed directly under the brine lines. If there is a stoppage in the gutter, not enough pitch to the line, or not enough water formed in any single defrosting operation to cause proper drainage, stagnant pools may be formed and molds grow therein profusely. Such gutters must be closely watched and cleaned regularly.

All moisture possible should be eliminated from working space which is under a cooling system. Temperature here is constantly changing from contact with outside air, as the doors are being opened and shut to receive or send out goods. The warmer air which rushes in will increase humidity as it is chilled to room temperature. This factor must be closely watched where nuts and fruit are stored if molding and fermentation are to be eliminated.

Storage space for containers must be watched. If paper or wooden containers are stored in a damp cellar they develop a moldy and musty smell which is transmitted to future contents of candy. They may even seed down the confection with molds. In this connection, it should be rememebered that excessive moisture in a container of this type will be absorbed by the confection, and fertile conditions for fermentation and mold propagation be created.

To sum up the situation, one need but remember that cleanliness is an essential in a confectionery plant; that sterilization of space as well as materials must be practiced; that removal of waste as fast as it is gathered is necessary; that personal cleanliness must be practiced by all, and that when cleanliness becomes a part of the daily routine of every worker, the problems of sanitation are already solved.

Treating Bran and cereal germs . .

Treating Bran and Cereal Germs

British Patent No. 311,424 to H. H. Lahmann and H. Lahmann, Weisser Hirsch, Dresden, Germany, May 11, 1929; in the Illustrated Official Journal (Patents), July 3, 1929, p. 3251. Nutritious matters or extracts are obtained from bran or the germ of various cereals or legumes by soaking in four or five times the quantity of distilled water at about a temperature of 131° to 149° F. for 6 hours, stirring during the soaking. Five to 10 per cent of barley malt is then added to the mixture, and air is excluded as much as possible.

The mash-liquid is separated by filtering, centrifuging or pressing. The solid ingredients are soaked once more in ordinary water which is separated as above. Bitter principles, such as volatile fatty acid, are removed from the extract by distillation with steam if a liquid extract is desired or by concentration in vacuum at a temperature of about 104° F. if a viscid or solid extract is wanted. When a considerable quantity of bitter principles is present, distillation with steam is resorted to before concentration in vacuum. The extracts may be added to products such as bread, chocolate or cocoa.

Casting Chocolate

British Patent No. 311,361 to E. C. R. Marks, 57 Lincoln's Inn Fields, London (Postum Co., Inc., 342 Madison Ave., New York, U. S. A.), Feb. 10, 1928. The known process of casting chocolate into plates or bars in which molds on an endless carrier, which are chared with the molten material, are passed through a cooling chamber before the solidified contents are removed is modified by cooling "relatively rapidly at a substantially uniform rate" to such a point that the material contracts relatively to the metal mold and thus can be removed readily therefrom without breakage. In the preferred method for producing plates of one-eighth of an inch in thickness, a three-stage cooling is adopted. The molds, charged with material at about 85° F., spend about 4 minutes in traversing a chamber maintained at 55° F., then a further 8 minutes in traversing a second chamber maintained at 45° F., during which solidification occurs, and finally spend another 4 minutes in traversing a low-temperature chamber, during which the relative contraction occurs to permit ready detachment from the walls of the mold.

Preserving Liquid Egg Materials

British Patent No. 296,462 to Egg Patents, Ltd., London, and Milroy A. Glencairn, Glasgow. In Food Manufacture, vol. 3, p. 556 (1928). Egg yolks or whites or mixed yolks and whites are preserved by mixing glycerine therewith and then evaporating at a non-injurious temperature to desiccation. The amount of gylcerine employed may, in the case of the whites, only be 0.1 to 5.5%, and in the case of the yolks only, or the mixture of yolks and whites, be 2½ to 15%. A smaller amount is used when yolks and whites are treated separately and then mixed. Drying may be effected by spraying the mixture into a chamber through which hot, dry air or other gas is passed. The product is obtained in flake or powder form.

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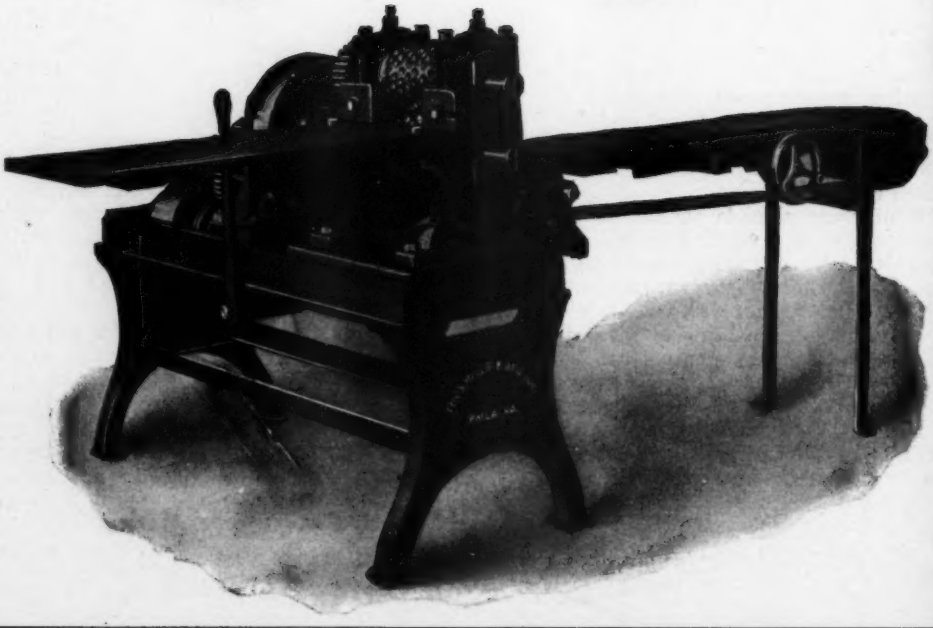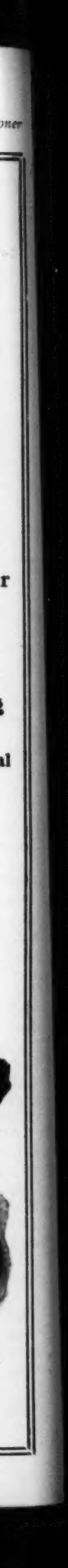
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